From ab4el.com Tue May 31 12:21:40 1994
From: mont@netcom.com (Mont Pierce)
Subject: "R1" defined:

>
>   R1 ???
> OK, I give up. I have searched my archives and hoped that someone
> else would ask, but since no one has. What is a R1? I know it
> is a receiver of some sort and that Laura is building one, but
> where do I find the circuit (or is it a commercial kit?)?

This is the direct conversion receiver designed by Rick Campbell. 624
kits sells it in kit form as the "Classic 40m Receiver Kit" for $66(?).

The R1 write-up by Rick Campbell is in the August 1992 QST. Some months
later he wrote about the R2 receiver. Similar to R1 except uses phase
matching to get a single signal output (USB/LSB).

73,
--
Mont Pierce

+--+
| Ham Call: KM6WT   Internet: mont@netcom.com |
| bands: 80/40/20/15/10/2 |
| modes: cw,ssb,fm |
+--+

From ab4el.com Wed Jun 1 14:33:36 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: 1994 Spring QRP ARCI QSO Party

Gang,

I got all the results of the above. I'll post them
tomorrow after I get them scanned in. No way that I
want to spend my time typing 'em all in. :-)

Internet #1   ---   225,764 Points

   KU7Y   - 15,750 points
   WA4VQD - 201,096 points
   NR3Z   -   8,918 points

Internet #2   ---   61,394 Points

AC4HF - 45,927 points
K5FO   -   9,230 points
KD4YRN -   6,237 points

Congratulations to #1. One of my team members, who shall remain nameless, sent in his 220,000 points after the cutoff point. :-) It's OK, it was fun anyway. Other team members missing too.

The soap box section shows that everyone had lousy conditions.

The winner of the contest was a first timer. Not a member of QRP ARCI, located in CO, and had a tower with single band multi-element beams for 20 and 40M on a very very high tower. :-) Again, summary to follow tomorrow.

I think antennas are everything in this game.

OK. Just a quickie.

dit dit

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Wed Jun 8 13:20:28 1994
From: ASIRENE@v9001.ntu.ac.sg
Subject: 20M Band Opening

Hi Gang,

This is just to inform you guys that there seem to be an opening from the West Coast US to South East Asia (9V,9M etc) at about 1600 UTC and QRP signals are coming through quite strong. I've heard quite a few of em for the last few nights consequtively, coming between 549 to 589 with modest power. So far I've heard KN6WV, AA6SF and KF7UI but no internetters yet, what gives?

72 es GL DX,
Daniel

From ab4el.com Mon Jun 6 21:14:30 1994

From: Bensondj@aol.com
Subject: 30-40 kits

Re: delay on shipping kits-

I just talked to Jack Frake- he's getting the kitting group together on Wed. to assemble the second lot of 50 kits. He's short only the crystals as of now, should hopefully arrive by Wed. PM. If xtals arrive, Jack will ship Thursday. Thanks for your patience, gang. 72 - Dave NN1G

From ab4el.com Fri Jun 10 12:32:45 1994
From: mvjf@mvubr.att.com (James M Fitton +1 508 960 2577)
Subject: 40-40 QRP Kits

FYI - Kits

Jack, NG1G shipped a dozen 30 meter kits from the 2nd batch of 50 kits ordered.

He is still waiting for the crystals to complete the 40m kits.

Also, he sent out postcards requesting balances.

Additional orders for kits should go to Dave Benson, NN1G. (Dont get calls mixed up)

Also, I finished a 40m portable station to be used in the QRP-AFIELD event this fall (9/17).

It consists of a miniature tuner, tuning bridge, keyer, and NorCal 40. The antenna will be an endfed wire with a couple of 1/4 wave radials. I cant wait to show it off at QRP-NE Field Day.....

Next, I am working on the 30 meter 40-40 station.

72 W1FMR

From ab4el.com Tue Jun 7 10:50:07 1994
From: "Kevin Anderson" <GGANDERSON@Augustana.edu>
Subject: 40/15m rigs?

My interest is in 40 and 15m CW. For several reasons: novice subbands, propogation, and dual use of antennas. The number of nice weekends we've had weather-wise in my

part of the country (Illinois/Iowa border) has got me
wanting to sit in the park (currently I don't have the
setup to do so).

Dual band kit rigs seem to be coming back, but in 40/20 and
40/30 combinations. Why not 40/15? I understand that DC
rigs have trouble at the shorter wavelengths, and it's
harder to build a stable VFO, but what else is stopping this
combination?

Interested, but not necessarily with money...:-(.

72 de Kevin, kb9iua
* *
Kevin L. Anderson,   Geography Dept.,   Augustana College
Rock Island, Illinois   61201   USA   phone: (309) 794-7325
e-mail: gganderson@augustana.edu or kla@helios.augustana.edu
* *

From ab4el.com Tue Jun 7 14:57:23 1994
From: xenolith@halcyon.com (Kevin Purcell)
Subject: Re: 40/15m rigs?

"Kevin Anderson" <GGANDERSON@Augustana.edu> said:

>Dual band kit rigs seem to be coming back, but in 40/20 and
>40/30 combinations. Why not 40/15? I understand that DC
>rigs have trouble at the shorter wavelengths, and it's
>harder to build a stable VFO, but what else is stopping this
>combination?

One way of building a RX (and TX) to cover two bands is to band image (make
an RX that receives image frequencies in two amateur bands and then rely on
the preselector to attenuate one or other of the bands).

This became popular when people started to get into SSB. Getting the most
bang per buck from your crystal filter was a priority. Using a 9Mhz IF and
a 5Mhz VFO you could tune both 80m and 20m (and incidentaly get LSB on 80m
and USB on 20m -- is this why we have the LSB for frequencies below
10Mhz?).

If you tried this for 40/15 you run into some awkward problems. The IF
would be at 14Mhz (so there is a possibility of break through from 20m
transmissions) but worse is the VFO tunes from 7Mhz up, which is in band.
Meanwhileits 2nd harmonic scans through the IF. All in all an awkward
design.

There have been a few other band imaging designs published. I like the idea

of a WARC band imager for 30m and 17m with a 14Mhz VFO (or a VXO) and a 4Mhz IF using computer clock crystals (see recent ARRL handbooks). Notice that this is a different type of band imager setup with the IF below the two bands (the 80/20 design has the IF between the bands.

80/20 scheme -- the tuning is in the opposite direction in each band
sidebands are inverted in each band

```
          |<-- 5 -->|<-- 5 -->|         <--- VFO
|---------|---------|---------|---------
0         4         9         14
          LSB       IF        USB
```

30/17 scheme -- the tuning is in the same direction in each band
sidebands are not inverted in each band

```
                    |<-------------- 14 -------------->|   <--- VFO
|<-------------- 14 -------------->|                       <--- VFO
|---------|---------|---------|----+----|---------|----+----|
-4        0         4         8    10   12        16   18   20
-IF                 IF             USB                 USB
```

Note the clever use of aliasing in this scheme (a negative frequency is just an wave traveling in the opposite direction).

Imaging rigs are cool! The trick is finding which bands they will work on with availible components! Anyone else got any favorite combinations?

Kevin Purcell, N7WIM / G8UDP
xenolith@halcyon.com
(206) 649-6489

"Organising programmers is like herding cats"

From ab4el.com Tue Jun 7 16:12:30 1994
From: howie cahn <wb2cpu@world.std.com>
Subject: Re: 40/15m rigs?

On Thu, 28 Jul 1994, Kevin Purcell wrote:

> One way of building a RX (and TX) to cover two bands is to band image (make
> an RX that receives image frequencies in two amateur bands and then rely on
> the preselector to attenuate one or other of the bands).
>

Of course, another alternative to using imaging is just to use a local oscillator at the right frequency for the desired input/output frequency

and the given IF. These days, it isn't that hard using PLL or DDS
synthesis. For most of the homebrew rigs, the performance of John Welch's
TechnoWhizzy DDS should be adequate.

howie
wb2cpu@world.std.com

From ab4el.com Tue Jun 7 19:15:15 1994
From: "Michael Bendio (unix dev)" <mb@titan.wordperfect.com>
Subject: Re: 40/15m rigs?

On Thu, 28 Jul 1994, Kevin Purcell wrote:
...
> Actually I'm more an more attracted by the idea of a DDS followed by a PLL
> (see Rhode's article in the lastest QST). These are simple, have nice
> performance wrt phase noise, and can extend some of those not very wide
> range cheaper DDS chips to a reasonable range. The idea I have in mind is a
> single conversion to high IF (like the QRP plus) with a 50 to 60 Mhz Cohn
> filter. You should be able to build a 1.8 to 30Mhz TxRx like this.
...
I was very interested in Rhode's article, too, and was really disappointed
that he didn't go into a little more detail on his synthesizer. I'm not
smart enough to build a synthesizer from the block diagram he showed, but
if anyone else pursues this, I'd be *very* interested to hear of your
experiences with it. Sounds like just the ticket for a VFO for the R2.

Michael Bendio   WT7J   mb@titan.wordperfect.com   801 222-5367
Opinions are my own and aren't necessarily shared by Wordperfect Corporation

From ab4el.com Tue Jun 7 20:30:51 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: 40/15m rigs?

One way to build a 15m/40m dual-band rig is to take advantage of the
harmonic relationship between the bands. You could do it with a direct
conversion receiver, a 40m VFO, and a switchable frequency tripler. It
might make a nice package for an R1 reciever.

            Stephen

From ab4el.com Wed Jun 1 07:01:46 1994
From: "Jon Iza" <iapizloj@bi.ehu.es>

Subject: Address of Elktronic,NE

Hola, amigos
Sorry for the bandwith. I've tried to ping N9JZW for more info on his DDS
transceiver but email bounced somewhere at cwru.edu.
Anyway, it looks from the archives there was a kit by Elktronic,NE but
I've been unable to find additional information or address. Any clues?
72 + 73 from Jon, EA2SN

From ab4el.com Sun May 29 12:23:56 1994
Subject: Antenna Matching
From: Yehuda Harper <jrh@owlnet.rice.edu>

I recently built a 20 meter rock bound CW transmitter. Using a Diamond watt
meter, I measure an output power of 1.75 watts into a dummy load. However,
when I feed the signal into a dipole and match the SWR to 1:1, the measured
output drops to 1.25 watts. If I mismatch the antenna to a 3:1 SWR, I get
a measured output of 2 watts. Questions:

1) Why the differences? Why does the power output go up with a mismatch?
    I would expect the opposite. I've checked the output filter of the
    transmitter and the # of windings on the torroids and the capacitor values
    are correct for 20 meters.

2) Am I getting correct power readings?

3) Should I run the transmitter at 2 watts out into 3:1 SWR or 1.25 watts
    out into 1:1 SWR. The output transistor doesn't seem to overheat either
    way.

Jim/KB5CTQ

From ab4el.com Mon May 30 06:42:56 1994
From: James Lyons <jlyons@CAM.ORG>
Subject: Re: Antenna Matching

On Sun, 29 May 1994, Yehuda Harper wrote:

> I recently built a 20 meter rock bound CW transmitter. Using a Diamond watt
> meter, I measure an output power of 1.75 watts into a dummy load. However,
> when I feed the signal into a dipole and match the SWR to 1:1, the measured
> output drops to 1.25 watts. If I mismatch the antenna to a 3:1 SWR, I get
> a measured output of 2 watts. Questions:
>
> 1) Why the differences? Why does the power output go up with a mismatch?
>   I would expect the opposite. I've checked the output filter of the

> transmitter and the # of windings on the torroids and the capacitor values
> are correct for 20 meters.
>
> 2) Am I getting correct power readings?
>
> 3) Should I run the transmitter at 2 watts out into 3:1 SWR or 1.25 watts
> out into 1:1 SWR. The output transistor doesn't seem to overheat either
> way.
>
> Jim/KB5CTQ

I've experienced this effect before and I suspect it is due to the
presence of harmonics which register on the dummy load but not on the
frequency sensitive dipole. Mismatching can produce all sorts of high
apparent outputs but I don't believe they are real. Go with the matched
antenna and the 1.25 watts.

Perhaps someone else can give you a better explanation.

72,

Jim, VE2KN

From ab4el.com Tue May 31 20:39:23 1994
From: BOB@psychnet.psychol.utas.edu.au
Subject: re: Antennas over salt water

In the past I worked for quite a few years as a Radio Officer on merchant
ships.
On a number of occasions I built up cw QRP rigs from junk box parts and some
of the results were quite astounding.
Probably the best was running about 50mW o/p to the main transmitting
antenna on the ship (an inverted 'L') and working back to VK land from near
the Aleutians.
Guess there's nothing like a big antenna with a 1000 foot long steel hull
sitting in salt water for an earth.....

73s

Bob.
--

 ____
| email: bob@psychnet.psychol.utas.edu.au |
| |
| postal: Robert Reid, Dept of Psychology |

| University   of   Tasmania |
| GPO Box 242C, Hobart, Tasmania |
| | Tel: 61-02-202242 |
| Australia. | Fax: 61-02-202883 |

From ab4el.com Thu Jun 2 10:18:20 1994
From: "DONALD A. COLEMAN (EXT. 2850)" <DACOLEMAN@fair1.fairfield.edu>
Subject: Re: Antennas over salt water

Gang,

Maybe you don't always need the steel hull or even the salt in the water.

I recall a story told me by a ham I qso'ed years ago. He told me he once put up a forty-meter dipole over a narrow stretch of river--the Hudson, I think. His qth was on a cliff, and the other end of the ant. was on an opposite clif. He said he could hear Europeans all day every day on forty but couldn't break them, perhaps because the Eu stations didn't expect a u.s. station to be trying that during the day.

I know I've had marvelous luck with only three watts from a location in New Brunswick, Canada, that was right beside a salt-water inlet there.

72.4945223

W1VOQ

From ab4el.com Mon May 30 17:02:30 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: antennas over saltwater

Speaking of antennas over saltwater, if you've ever driven around the south-east portion of San Francisco Bay you've noticed a couple broadcast stations (non-qrp) with their antennas sitting in the shallow water of the bay. Excellent ground system. If one of those stations ever goes off the air I'd love to hook up a qrp 160M rig to the antenna and see what it could do.

Jeff NH6IL

From ab4el.com Mon May 30 09:23:08 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: ARK 4

Well got real depressed Friday night and finished the ARK4..was smart and didn't try to fire it up...

Saturday fired it up.. nothing fried..but no audio in the receiver.. took it apart heated up a bunch of solder joints.. checked everything with a magnifying glass.. finally went to the trouble shooting section and saw that you are suppose to have a jumper till you get the audio filter in.. put in the jumper .. the receiver worked fine.. got a signal coming in with a dumby load and the power meter on my work bench..figured that was a good sign HI HI.. the receiver was tuned.. played with the coils.. but they were PERFECTLY set when I fired it up.. the receiver worked great.. put in the fine tune, rit and audio filter and fired it up again.. no audio.. started to think I needed to put the jumper back in.. but knew better.. finally realized I hadn't put the chip in the audio filter.. put it in and the rig worked a lot better.

Took the board over to the operating bench and hooked it up.. checked and made sure TX and REC were on the same freq.. did my usual last minute minor tweek.. made a QSO immediately .(and this is big power Contest weekend) after about 5 more contacts.. decided to put the cover on. Worked everyone I heard and heard about everything that the 850 could hear...

Found the rig is a bit useless without the audio filter engaged.. like the fine tune on the ARK4 better than the buttons on the ARK40.. actual didn't mind the thumbwheels for contesting.. liked the detents on the fine tune. Made a couple of longer QSOs.. rock solid VFO and good reports. Mine puts out about 5 watts. .good looking wave form.

Was operating about 1/2 day before I realized I had built the rig and didn't have to do any wiring of the controls.. boy do I appreciate that..not one wire (like the Norcal 40).

I think the rig has about one of the best receivers I ever built and like the way it works..

I can live with the minor inconvenience of the thumbwheels.. I thought the audio was a little weak.. only MAJOR complaint is the relays.. they are the loudest things I ever heard..ruin it for me.. I think this could be one of my favorite rigs except for this flaw.. I took the rig apart and packed it in foam.. doesn't help. I am using computer amplifed speakers.. they amplify the relay clicks also.. noticed with the headphones on .. doesn't really seem to be much of a problem. .can't really hear the clicks.. but I don't like headphones.. so have to do something about this.. my Gary Breed from 624 kits had very quiet relays.. I wonder if I can just find a plug in replacement relay...any suggestions.. or maybe come up with a solid state switching circuit.. but must be some reason Dick didn't do this.

I think the rig is very rugged, a great size for backpacking, a great kit, great quality parts, great directions.. great receiver and TX, about the easiest QRP kit to tune up but the kit has some minor flaws.

73

Jeff, AC4HF

From ab4el.com Tue May 31 11:51:11 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: ARK4->ARK4

HI,

finally got to do something I consider nifty (now there's an old time word for you youngsters).

Nils, WB8IJN had finished his ARK4 just a wee bit ahead of when I got mine on the air. We have been communicating regularly via EMAIL about progress and impressions. Well last night we had a sked.

The sked was for 7.047 (not 7.048 or 7.046). Nils called me via phone and talked for a while. The bands were TERRIBLE.. but we had no problem for about 95% of the QSO.. fun talk.. realy nice to hear what a rig you just finished sounds like from the listener's end. I was using a Gap Vertical and I believe Nils was using a dipole (may be wrong.. old age wipes the memory). There was NO DRIFT at all.. very nice... and the audio filter on my rig was quite effective.

My only complaint about the rig is the relays.. and going to try different type or find some way around it.. told Nils who use to work for Drake, that he needed to design a solid state switching circuit for it.

PS.. I am going to leave for Cancun on Sunday. Thinking about bringing my MFJ 20 meter SSB and a dipole and a battery.

73

Jeff, AC4HF

From ab4el.com Sun Jun 5 21:35:49 1994
From: James Speer <F_SPEERJR@CCSVAX.SFASU.EDU>
Subject: ARK40

This may be old news to all you designers and compulsive kit builders, but I just got some gear up on 40 and have worked more qrp stations in the last week or so that I had previously in several months on 30. Yesterday worked W8MVH in Ohio (I'm in Texas). He was running an ARK40 with full-wave loop. What I thought was remarkable was the rig's keying characteristics -- sounded exactly like the old Collins transmitters -- you know, that distinct leading "thump," a leading edge so near square that if it were any squarer at all there's be noticeable key clicks, but in fact there are none. I've always thought that particular shape produced the most reeadable code possible, especially under degraded conditions, and I was very surprised to hear it in a QRP rig -- certainly don't hear it in mine. It inspired me to start thinking about keying mods for my MFJ gear.

72! Jim K5YUT

From ab4el.com Mon Jun 6 13:31:09 1994
Subject: ARK40 vs. ARK4?
From: rehm@zso.dec.com

Can someone comment on the differences between
the S & S Engineering ARK 40 vs. the ARK 4?

(When I refer to ARK 4, I'm referring to the full $199.95 kit).

What I can see so far:

1. Ark4 is smaller (and lighter ?)
2. Ark4 has crystal controlled detent fine tune for 100 Hz steps
   Ark40 uses thumbwheel (actually pushbutton) digit
   switches for the 100 Hz steps.

Both seem like good reasons to spend less money and go with the ARK4.
Are there any major differences in receiver design? (That is what
most impressed me about the ARK40.)

comments?

/eric rehm
Seattle, WA

From ab4el.com Tue Jun 7 08:52:27 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: ATU?

Hi Gang,

I just finished modifying my ARK 20 so that the sidetone is

independent of the audio volume control. Also added an additional muting circuit as some of the RX output seems to be breaking through during TX. Now the thing sounds clean as a whistle and does not blow my ears to the next universe when trying to work very weak signals with the volume all the way up. HI HI :)

My questions:-

1. Is a transmatch worth it or should I save money and simply set up another antenna for 40M and tune it right? What is a good transmatch? MFJ? Kenwood? Should I homebrew one?

2. Or should I try a trapped dipole? Mine is currently 1:1 on 20M so I could add traps at the ends and go from there?

3. Does anyone here have a circuit for a sweep oscillator? I would like to use one for checking out filter behaviour.

4. Could someone teach me how to measure output power using a scope. I guess I could work out the maths but am feeling kinda lazy now. I want to recalibrate my wattmeter.

5. Baluns. Other than giving a more symmetrical radiation pattern, does it do anything useful for QRP? (on bad for QRP like losses?)

6. How do I measure ERP?

Heh, lotsa questions here but I thought I might as well ask them while I'm on the list :)

72,
Daniel
--

+-------------+-------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+-------------------------------------+

From ab4el.com Tue Jun 7 10:47:26 1994
From: janderson@polycom.com
Subject: Re: ATU?

4. Could someone teach me how to measure output power using a scope. I guess I could work out the maths but am feeling kinda lazy now. I want to recalibrate my wattmeter.

Daniel:

The simplest way is to put the scope across the load and measure the voltage. This measurement is typically peak-to-peak, so we'll need to change it to RMS for the power calculation:

P = Vrms*Vrms/Rload

and since Vrms = Vpeak-to-peak * (0.707/2), we get, by substitution:

P = (Vpeak-to-peak ** 2) / (2 * R).

Note: It is VERY IMPORTANT that the load be a resistive load. Reactances (caused by wire-wound power resistors, for instance) can change the results dramatically!

Let me know what other replies you receive - I've had some of the same questions myself!

Cheers & 73,

Jeff, WA6AHL

From ab4el.com Tue Jun 7 12:28:24 1994
From: howie cahn <wb2cpu@world.std.com>
Subject: Re: ATU?

On Tue, 7 Jun 1994 janderson@polycom.com wrote:

> The simplest way is to put the scope across the load and measure
> the voltage. This measurement is typically peak-to-peak, so we'll
> need to change it to RMS for the power calculation:
>
> P = Vrms*Vrms/Rload
>
> and since Vrms = Vpeak-to-peak * (0.707/2), we get, by substitution:
>
> P = (Vpeak-to-peak ** 2) / (2 * R).
>

This is correct except I think you did the substitution wrong (or maybe I'm doing it wrong). As you say:

Vrms = .707 * Vpp / 2

Squaring both sides =>

```
Vrms ** 2 = ((.707) ** 2) * (Vpp ** 2) / 4  =>
          .5 * (Vpp ** 2) / 4 =>
         Vpp / 8
so
P = (Vpp ** 2) / (8 * R).
```

As a sanity check, if you see 25 Vpp on a scope into 50 ohms the output power is:

```
     (25 ** 2) / 400 = 625/400 = 1.56 watts, which I think is about right.
```

72/73... howie
wb2cpu@world.std.com

From ab4el.com Fri Jun 3 17:23:03 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: bye bye

Well all,

about to shut off the computer and prepare for Cancun.. hope they don't hastle me about the radio(s).. going to bring my 2 meter..not sure there is a repeater.

catch you in a week and maybe on 20 meter ssb/xe3/qrp

72

Jeff, AC4HF

From ab4el.com Sun May 29 09:00:25 1994
From: william r finch <wrfin@firefly.prairienet.org>
Subject: Callsigns

Just wondering if somebody in 2-land can tell me what kind of calls extras are getting there. I will probably be relocating to NY, and was curious. TNX, es 73s

```
Bill Finch                          ~ | ~
KF9KI                              ~~ | ~~
Champaign, Il                       ~ | ~
wrfin@prairienet.org                 /|\
```

From ab4el.com Thu Jun 2 10:49:25 1994

From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: Classc->ARK4

Howdi,

about ready to leave for Cancun.. sure was stupid of me to sell all my small CW 20 meter QRP rigs.. now only have my MFJ SSB, If I can think of a way to fit it, may bring the OH.. don't really want to take a chance of scratching it up.. real pretty rig.

Been using my ARK4 and OH Classic as my main rigs now.. really giving them a workout. Both are TOP of the line.. both in TX and Rec.

I found that the ARK4 relay problem really isn't a problem if you use headphones (which is was designed for).. seems the amplified speaker just amplifies the relay click .. and the headphones ignore it about totally.

The bands were really poor last night.. good testing conditions.. did a lot of switching back and forth on real weak signals between the two rigs.. they are both exceptional in the receive... think if the signal is there. .you will hear it..

I would love to get both rigs into the communications lab here on campus and see what the numbers say.. I usually rely on .. on the air performance.. but these two are really close.. have my guesses and would love a precision answer.. I would bet that both would come up with some impressive numbers.. anyone out there have one of these and access to a testing lab?

I might be able to get them in for testing some time this summer.

73

Jeff, AC4HF

From ab4el.com Sat May 28 22:24:37 1994
From: BHOWLE@delphi.com
Subject: Classic - TR Board - R342 ???

HelP !

I've looked and looked for R 342 on my OHR Classic TR Board - can anyone help? I'm sure it's there I just can't find it!

Thanks in advance for the directions - BTW this is a -very- well done kit, much better than Heathkit quality - parts, case, board and instruct-

ions are all first rate.

TNX - Bob - WA4ZID

From ab4el.com Mon May 30 09:54:41 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: contest

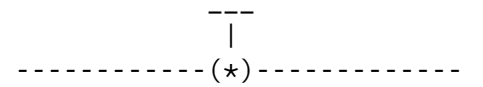
> From: [<Alan Kaul, W6RCL>] kaul@netcom.com
>
>
> Message-Id: <Pine.3.89.9405281024.A15162-0100000@netcom6>
> Mime-Version: 1.0
> Content-Type: TEXT/PLAIN; charset=US-ASCII
>
> The QSO's are slow, the propagation isn't very good and either there are
> VERY FEW Internet QRP ops on, or propagation to QRP stations is REALLY BAD.
> Last night 40M produced QSO's w/ VK, JA, YB, TI, KL7 and many Canadian
> prefixes. Ten sounds dead at my QTH this morning, 15 and 20 have been
> North America only for me -- but I have heard some Europe on 20, just
> can't seem to work em. QSO total after 3-hours on-air: fewer than 50.
> Come on in! CUL, 72 de alan
>
>   [<Alan Kaul, W6RCL>] kaul@netcom.com
>
>
>
Well, I got my ARK4 together in time for the contest.. didn't know
there was a contest.. but found out quick enough. Worked everyone
about first call.. wasn't contesting, just testing out a new rig..
the way I was going.. if I had the time.. could have done real
well I believe.. not too much DX.. worked a couple.. but NO
PROBLEM working all over the US, one Mexico and a bunch of
Canadian.

73

Jeff, AC4HF

From ab4el.com Thu Jun 2 23:51:12 1994
From: Rick Zabrodski <zabrodsk@med.ucalgary.ca>
Subject: crystal source

need a few qrp freqs and a custom crystal to make my hw9 work on warc bands
sources and addresses?
thanks!



**----------
Dr. Rick Zabrodski BSc, MD, CCFP(E) * VE6GK "glider king"
EMAIL: zabrodsk@med.ucalgary.ca * "M.D. on weekdays"
Packet: VE6GK@VE6YYC.#cgy.ab.can.na * "Solar powered aviator
Phone: (403) 271-5123 Fax: 225-1276 * on weekends!"
****

--1392555948-1472418420-770520903:#15690--

From ab4el.com Sat Jun 4 12:32:23 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: CW in Mexico

Howdi,

well got to feeling bad about not bringing a CW rig to Cancun.
Thought about the article in QST..

Went to the outside junk room.. cut a piece of 5"X5"
plexiglass..drilled some holes for the wires and ropes.. sent into
the junk closet and found some real tiny coax the size of 174..but
with different numbers on it.. it was about 30 feet so. .figured
it must be the right stuff (HI HI).. didn't want to use magnetic
wire.. tangles too easy.. got some not too heavy stranded and
insulated wire out of the junk closet. Had fun putting a 259
connector onto the tiny coax.. finally got it right...

strung the thing up in the back yard..had made the wire a lot
longer than I thought it should be .. because I had no idea about
how this thing would feel...found it to be 1:1 at 7.690.. so cut
off a couple of hunks on each side and got it under 1.4:1 on 30
meters.. may be a little better now..it wasn't too hight off the
ground.. took my MFJ 30 meter, a battery and a tiny key outside
and could hear signals..checked the swr with my OH QRP wattmeter..

Heard someone calling CQ.. made a contact.. so guessing it works
ok.. seemed to hear what my vertical was hearing.. so think it
will work fine..the coax and all the wires wrap neatly around the
5x5 plexiglass. the thing is incredibly small and light.. cut tiny
pieces of PVC for end connectors.. epoxied and tied off all the

wires on the plexiglass..so should make it through the trip.

while doing my morning jog.. got to thinking..I liked the thought
of a really small multiband.. no tuner antenna.. and knew I had
the first part done.. think all I would need to do is to cut some
small pieces of plexiglass or pvc.. and find the 20 meter length
and cut the wired at this point and put a small end insulator..
then hook on sections for 20/30/40.. leave a small piece of wire
from the 30 with a alligator clip on the end of it.. same for the
40 to 30 part and just connect which section(s) you want to work.
Advantage of this of the one in the article is that you only have
one dipole to hang up.. and would only take a minute to let each
end down and clip the section together.. didn't like the thought
of having two seperate wire sets. Going to redo the antenna when
I get back... let you know how it works..

PS.. long time ago sent my mastercard # to Russia? for a new
surplus mini key that comes in its own case.. got it yesterday..
cost $28 with shipping (it says something about R100.67.. hope
this means the rubbles equivelent.. key is worthe the $28..not
$100).

72

Hope to work some of you /XE3... hope there s reciprocal
licensing. think there is

Jeff, AC4HF

From ab4el.com Fri Jun 3 22:54:51 1994
From: Adrian Weiss W0RSP English Department <AWEISS@charlie.usd.edu>
Subject: DECEPTIVE SWR READINGS

Jim wrote:
< I measure an output power of 1.75 watts into a dummy load. However,
<when I feed the signal into a dipole and match the SWR to 1:1, the measured
<output drops to 1.25 watts. If I mismatch the antenna to a 3:1 SWR, I get
<a measured output of 2 watts. Questions:
<1) Why the differences? Why does the power output go up with a mismatch?
<   I would expect the opposite. I've checked the output filter of the
<   transmitter and the # of windings on the torroids and the capacitor values
<   are correct for 20 meters.
<2) Am I getting correct power readings?
<
<3) Should I run the transmitter at 2 watts out into 3:1 SWR or 1.25 watts
    out into 1:1 SWR. The output transistor doesn't seem to overheat either
    way.

Jim/KB5CTQ

Jim: A few details aren't clear, i.e., the kind of circuit used in the "Diamond" wattmeter, whether it is an in-line circuit bridge circuit or just what. Nonetheless, the phenomenon you describe suggests that it is not a "directional coupler" bridge type of circuit commonly refered to as the "Breune" SWR\wattmeter. The kind of results you mention usually can be traced to the use of a slot-line voltage-sampling type of simple circuit. Functionally, it simply measures the voltage at a point along the feedline. The problem arises because it cannot distinguish between the components of the incident (forward) and reflected waves. A little theory:

1) All power fed into a transmission line is eventually absorbed either in line-loss or in the antenna and radiated.

2) On a perfectly matched antenna-transmission line, all incident power is absorbed in the antenna and radiated.

3) When a mismatch is present, a portion of the incident wave is reflected back toward the transmitter (input) end of the line. Upon arriving, it is re-reflected toward the antenna. Hence, waves are traveling in both directions on a mismatched line. Upon each reflection, the voltage and current components of the reflected wave sum vectorally with the new wave traveling in the same direction.

4) The vectoral summing of incident and reflected voltage and current components produces a higher voltage or current at a given point along the line than is present in a perfectly matched line. The end result of the reflection/summation process is the standing wave. A simple measurement of either current or voltage will always produce a higher reading in the mismatched line than in the matched 1:1 SWR line.

5) The problem with slot-line voltage-sampling SWR meters should be apparent. Such a meter will always give a higher reading on a mismatched line than on a matched line. Now, the scale of the meter will read "watts," but this is simply a calibration "trick" which has converted "volts" to "watts" based upon whatever assumptions the meter-designer uses, e.g., that the voltage will be measured on a line with a nominal impedance of 50-oHms or whatever. The point is: the needle is swinging with the change in voltage, not power!

6) If the insertion point of a voltage-sampling circuit is moved, say, 10-ft farther down the line, it will appear that you're getting even more power, or less, than at the original insertion point. That difference simply follows the changing magnitude of the summed wave

energy along the line, that is, the standing wave.

7) A simple test to check your SWR meter is implicit: insert an extra 10-ft of feedline and see if the reading changes.

8) Another simple way of correcting for the summation value. You can get an idea of something that approximates the actual forward power in this manner. Go ahead and do a quick 1:1, 2:1, 3:1 set of readings. Subtract the "reflected" watts from "forward" watts for each reading. If the output matching network connected to the final transistor is not being totally whacked by the induced mismatch, the "forward power" reading should remain fairly stable. However, deliberately mismatching the final output network invites real problems that can be misinterpreted, as you have done above, as a real increase in power. Not so!

Remember that most simple solid-state rigs use a fixed-tuned output matching network which is designed to match a given transmission line "load" impedance (typically 50-oHms) to the collector impedance of the final transistor (usually <<<50-Ohms), at a given output power and collector voltage, at a given frequency. The dynamics of the network changes when these design conditions are not met. In a sense, when an output network "sees" a load that departs from its design parameters, it usually passes word back to the final that conditions are right for generating a whole bunch of harmonic energy that will make it through the network.

So, in simple solid-state rigs, it is frequently possible to get a really amazing increase in output power by deliberating mismatching the feedline. It looks like a free-ride -- until you check it out on a spectrum analyzer and see that all that extra power is spraying across the entire VHF/UHF range! Most of the time a TV set will take the place of the spec-analyzer. This is why a transmatch is always a good idea with a simple solid-state rig unless you can guarantee! a very well-matched antenna with something under a 2:1 SWR at the transmitter end of the feedline. A transmatch provides a necessary flexibility to assist the fixed-frequency/impedances output network do its job. Furthermore, the transmatch puts a an adjustable, tunable circuit between the final and the antenna. Two birds with one stone: the ability to perfectly match final to the input of the transmission line, and an extra stage of filtering!

9) Now, what kind of SWR/wattmeter should you use? The "directional coupler bridge" type circuit designed by a guy named Breune and popularized by Doug DeMaw and a host of other QRP writers is what every QRP'r needs. Its key feature is the ability to separately measure the voltage and current components of each traveling wave,

e.g., distinguish the incident wave from the reflected wave.

Because of the phase-differences between incident and reflected waves that occur at every point along the feedline, it is always able to separate the two. It basically reverses the vectoral summation process: the bridge is designed so that the voltage developed by the reflected wave is simply subtracted (cancelled) from the total forward wave voltage. Or vice-verse.

Now remember, it is possible to get different voltage readings with a slot-type voltage-sampling meter by changing the point of the measurement because of the stationary "standing wave" that is developed along a mismatched line. Once you eliminate the reflected wave components from the measurement, we're no longer dealing with a stationary standing wave, but the incident energy slidding down the line at 186K-mi/sec, in other words, an apparently stable magnitude of voltage or current that is the same at every point along the line. Hence, the insertion point of a directional-coupler Breune bridge circuit is irrelevant: it will measure the same forward power no matter where you insert it, and so long as the final is actually feeding a stable level of power into the line, no change in power reading will occur. That assumes, of course, that the bridge has been correctly nulled for the actual surge impedance of the feedline. Furthermore, the Breune bridge is not frequency sensitive, but exhibits an essentially flat response across a wide band as defined by the lower and upper limits which are established by the components of the sampling circuit. Finally, the bridge can be calibrated directly in watts (honest watts).

So, in the final analysis, your reading of 2-w at a 3:1 mismatch is attributable to a variety of factors -- quite possibly you are getting 0.75w more than at the 1:1 SWR, but I can guarantee that most of the 2-w "gist ain't on 40 meters" like you thought!

Good luck. The antenna is the key to successful QRP operation. But you have to get the power to it, and that means knowing if you are or not! 73 Ade W0RSP

***P.S. If this posting actually makes it through and someone reads it, please QSL to let me know that my email postings are posting!

**

From ab4el.com Sun Jun 5 17:25:21 1994
From: Bob Gobrick WA6ERB <70466.1405@CompuServe.COM>
Subject: RE: Deceptive SWR Readings

TO: >INTERNET:qrp@think.com

Open letter to Adrian Weiss W0RSP

Ade,

I just wanted to say Thanks for joining us here on the INET QRP list and giving us some of your comments like your message to Jim on SWR readings - just great.

We've never met, even though I know you were active for many years in QRP with CQ magazine and at Dayton with the ARCI. I'm a born-again QRPer and I've been spending the last few years just trying to catch up on all the things that have taken place in QRP. I have to admit I've even gone back to all my old CQ's and I clipped out all your QRP articles before I donated my mags to a worthy cause.

I have a question (and I know you've been asked this before) - I was able to get a copy of your History of QRP (and I believe they are still available) but I have been searching for years for a copy of your The Joy of QRP. I guess this is an open request, but I'd be interested in buying a used copy, borrowing a used copy (and pay any delinquent library overdue fees) or doing just about anything to get my hands on a copy to read. Do you have any leads on this... or if anyone knows of a copy floating around for sale or lease - I'd be appreciative.

Again thanks for your input and with your permission maybe some of the QRP club newsletters will pick up some of your tutorials for print.

73, 72 Bob VO1DRB/WA6ERB

From ab4el.com Sun Jun 5 22:16:06 1994
From: Adrian Weiss W0RSP English Department <AWEISS@charlie.usd.edu>
Subject: RE: Deceptive SWR Readings

Dear Bob:
Thank you very much for the nice welcome. I certainly am excited about INET QRP and enjoy reading the daily postings very much. I also am flattered that you clipped all my CQ articles! That's a pile, isn't it!
Unfortunately, THE JOY OF QRP has been out of print for many years -- in fact, all 2200 copies went in under two years. As I understand the situation, it is next to impossible to find anyone willing to part with their copy.
I might as well add a general announcement that might help. As copyright owner of JOY, I have absolutely no objections to anyone making xerox copies for a friend or other contacts.vmye3wqbG

From ab4el.com Wed Jun 8 04:26:45 1994
From: Walker Tim <walker@sappey.grenoble.hp.com>
Subject: delete

delete walker@sappey.grenoble.hp.com qrp

From ab4el.com Sat May 28 21:50:23 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: DeMaw's 40M VFO

Gang: Has anyone built the 40M VFO in QRP NOTEBOOK (pages 29-30)? It
calls for a couple MPF102's (RS has them) and a 2N222A (I've got plenty),
and I can scrounge the remaining components.

I'm going to use point-to-point wiring rather than a PC board.

Please let me hear from you if you've built one.

.73,
Jeff NH6IL

From ab4el.com Fri Jun 10 18:51:27 1994
From: jpo@acd4.acd.com (Jim Osburn)
Subject: Evansville Hamfest

Last Sunday I attended the Evansville Hamfest.
It's a small hamfest but there were some bargains there.
The bargain of the day was knobs for $0.10 each. They look like the
Radio Shack communication knobs. I bought 10.
I bought a bag of pushbuttons, maybe 30 in the bag, for $3.00.
I need four of the pushbuttons for my next keyer, I have plenty left
for the junk box.
I bought a bag of 10 k pots with 0.25" shafts, maybe 20 in the bag, for $3.00.
I bought some 78L05 regulators for $0.10 each.
I bought some nice looking plastic enclosures for 3 for $10.00.
They'll make great QRP rigs but I think I'll replace the front and
back panels with PCB material and use more PCB material inside to
get some shielding.
I bought some BNC to UHF adapters.
I bought a copy of the book "Keys, Keys, Keys".
I bought some other odds and ends too.

There was one QRP rig for sale there, an A&A Engineering job for $100.00.
That's A&A, not S&S. I always get those two mixed up.

In other words, it wasn't an ARK.
I couldn't get the attention of the guy selling it, he was too busy yacking,
to ask what band it was on.
I figured $100.00 was probably too much and moved on.

I ran into a lot of ham buddies at the hamfest too.
All in all, I had a good time.

73,

Jim, WD9EYB

From ab4el.com Sun Jun 5 22:25:15 1994
From: rohrwerk@holonet.net
Subject: First QRP DX!

What a privilege to hit my first 5 watt DX with such s***** band conditions.

On 5/14 at 0222Z, on 14026 kHz, I answered UA9FAR in Perm and got a 559. A few
other Russians were audible, but he was a good 569.

Not only that, he asked for my county! When I told him Hennepin (MN), in which
Minneapolis is located, he asked if I knew somebody in our neighboring Twin
City, St. Paul -- if I heard him on 2 meters, would I tell him Vlad's looking
for him?... Small world...

72.927633

* John Seboldt...Mpls, MN...As a ham, K0JD...as a human...well,... *
| rohrwerk@holonet.net |
*   J.S. Bach of Borg: "Your style will be assimilated."   *

 -> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Sun May 29 12:30:39 1994
From: "H. Ward Silver" <hwardsil@seattleu.edu>
Subject: Re: Gain due to mountaint

> Unless you're talking about Lake Superior! The Minnesota North Shore has
> intrigued me as a possibility for antennas. What about a sloping wire (half
> wave at 160 meters) from a cliff down to the water's edge? Haven't followed up
> on this, but have seen some neat cliffs that climbers were using and wondered...

As the water surface helps mostly in the directions across it, Lake
Superior from the southern shore isn't going to do you much good in Field
Day. However, there are a number of peninsulas which extend out into the
lake which would be quite good for propagation in many directions. If you

could find a cliff with exposure across water to the south, so much the better.

GL, Ward N0AX

From ab4el.com Thu Jun 2 08:34:08 1994
From: lakeith@wrdis01.robins.af.mil (CONTRACTOR Larry Keith;653 CCSG/SCT)
Subject: Gel-cell charger?

I think I remember seeing a post about a gel-cell charger available
>from Alltronics or All Electronics..

If someone has that info, please e-mail to me..

tnx,

Larry, KQ4BY

From ab4el.com Fri Jun 10 10:21:30 1994
From: william.redfearn.cmwdr01@nt.com
Subject: Gell Cell Charger Review

The chargers that I ordered from All Electronics have arrived and I have a chance to use them some. They seem to work OK. There is no technical documentation included just directions on using the charger.
Catalog Description:
Kintek "Intellicharger". Charges 12 volt gell cell lead-acid batteries of 1.6 amp/hour or greater. Charger circuit regulates current providing more current to low cells and gradually ramping down current as battery approaches full capacity. LED glows red for fast charge and green when battery is ready to use. Batteries can be left on charger indefinitely.
Review:
The charger comes wrapped and boxed and appears to be new. It consists of a 12 VDC 500ma wall cube with a 48 inch (approx) cable connecting to a small plastic box (.75"X1"X2" approx), there is a bi-polar LED mounted in the box and a short cable ending in a 5 pin DIN plug. The box has four screws in the bottom for disassembly. The box contains a small PC board with an LM-324, the LED, a power transistor, a variable pot, and several resistors and capacitors. There is no schematic. I replaced the DIN cable with a cable ending in alligator clips.
Plugged in, with nothing connected to the charger, the LED is green, the output voltage is 13.8-14.0 vdc.
Plugged in and attached to a low battery, the LED is red, the output voltage varies based on the charging current, the maximum charging current is 500 ma. As the battery charges, the battery terminal voltages rises and the charging

current reduces. When the battery voltage reaches approx. 13.8 VDC, the LED changes from red to green and the charging current drops to about 90 ma. The change over point for the LED (and the charging current) can be adjusted by the variable pot on the PC board.
During the week, I have used the charger on all the gel cells I have (2, 7.5, and 25 A/H) and it seems to work. I dischargd a 7.5 A/H battery to 11 Vdc, attached the charger and left it overnight. The next day the battery terminal voltage with the charger still attached was 13.8 Vdc. After removing the charger and letting the battery sit a few minutes, the battery voltage dropped to approx. 12.9 Vdc. I should mention that all my batteries are used and I normally get approx. 12.5 - 12.7 Vdc when using them and discharge them to 11 - 11.5 Vdc before re-charging.
So, I'm still playing with the charger, but it seems like its a good deal.

==========
Dave Redfearn, SR PC LAN Analyst Northern Telecom RTP, NC.
ph.(919) 992-3925 email: cmwdr01@nt.com qrl? de N4ELM/qrp

From ab4el.com Mon Jun 6 12:50:19 1994
From: lemoine@sicom.com (Dana Lemoine)
Subject: Great group

I recently subscribed to this list. After reading the rec.radio.amateur.* groups for a couple of years, it is *really* nice to have found a forum where all the postings are worth reading and kill files don't seem to be necessary.

As Chuck would say, dit dit

Dana LeMoine KB7WSW/AE
lemoine@sicom.com

From ab4el.com Thu Jun 2 08:59:14 1994
From: bal@ccd.harris.com (Bruce Lifter)
Subject: Re: Hambrew es QRPp Review

Chuck Adams wrote: >.
>.
>. pp 4. I was not trying to make myself look good. I don't have an ego
>. problem. Ask anyone who has personally met me. I did the
>. review for the QRP mailing group. I did it to help people,
>. who with their own hard earned money have to make decisions
>. on where to get the best and most information for their

>. money. I used the data at hand, not go around and create it.

I appreciated the comparison and thought it was appropriate for the QRP reflector. I was quite surprised, however, to see the comparison in QRPp. I did not think that this was appropriate for QRPp since it did give the air of "tooting ones own horn" at the expense of another.

To the best of my knowledge, Chuck is member of several (many?) QRP organizations. It is quite appropriate for him to compare any two magazines on the QRP reflector. His inputs are respected by myself and others on the reflector.

This is no different than critical reviews of two rigs on the reflector. If a critical review of the NN1G 40/40 versus the NorCal 40 appeared on the reflector, and the reviewer praised the NN1G over the NorCal, I would not expect to see that review in the NE QRP newsletter either!

Hopefully this will not change the great job Doug and the gang is doing with the NorCal QRPp newsletter! Too much editing can be even worse than not enough.

73,

Bruce, KR4AQ, NorCal #185

(I receive only the QRP-digest. If there are any replys to the above, please copy me direct via email in addition to the reflector, else I won't see it until tomorrow.)

--
Bruce Lifter
Harris Corporation MS: R5-202
Controls Division email: blifter@ccd.harris.com
-.. . -.- .-. ....- .- --.- de KR4AQ

From ab4el.com Tue Jun 7 09:13:24 1994
From: prvalko <prvalko@vela.acs.oakland.edu>
Subject: Hello!

Hi everyone! This is the first (and last) time I'll do this, I am new to the mailing list and wanted to introduce myself and say hello.

I'm Paul, WB8ZJL and have been having fun with QRP for many years. I belong to the Michigan QRP club (#899) and wish I had joined back when Hank (K8DD) and some of those other guys were forming the club, I'd have a membership number lower than room temperature!

I am a BIG Ten*Tec fan, having used or owned virtually everything they've ever made. I currently have a Corsair 1 (prettiest Ham radio ever built IMHO), a pair of Power Mites (PM-1 and PM-3A), and an Argonaut 505 (with matching 50W amp {for display only}). I also have an MFJ 9040 and a "Dan's Kits and Small Parts--20M QRP tranceiver kit" The last item in my shack is my original, hand-built novice rig, a trusty HW-16.

We all know that QRO and VHF/UHF isn't "real" ham radio so I won't mention all the other VHF/UHF multi-mode satelite stuff cluttering up the shack :-)

I am interested in BUYING POWER MITES in any condition! No profit motive here... I just love the little rascals to pieces even if they are the most god-awful radios. If you would like a loving home for an old Power Mite, I would be honored to provide it. If you even OWN a Power Mite, I'd like to talk to you about it!

Thanks for reading this and I apologize for the bandwidth.

73! (or 72 if you're so inclined)

paul - wb8zjl prvalko@vela.acs.oakland.edu

From ab4el.com Mon Jun 6 12:14:18 1994
From: janderson@polycom.com
Subject: help! (with another list...)

Sorry to bother the QRP list, but does anyone know what's happening with the BOATANCHORS list? I just tried to post a message and had it bounced back with the following response:

----- Transcript of session follows -----
Connected to geech.gnu.ai.mit.edu:
>>> RCPT To:<boatanchors@gnu.ai.mit.edu>
<<< 550 <boatanchors@gnu.ai.mit.edu>... User unknown 550 <boatanchors@gnu.ai.mit.edu>... User unknown

What's going on?

Jeff, WA6AHL

From ab4el.com Sat May 28 13:14:37 1994
From: "MYRON R. KOYLE" <72530.1666@CompuServe.COM>
Subject: HF TRI-BAND BEAM REPLACEMENT

As all too many of my QRP-ARCI friends know, I made the worst mistake possible when I replaced my tri-bander after a direct lightning hit (and, Yes, it vaporized half of the elements). By "worst mistake" I mean it is OK on 10M, 2 megs low on 15M and 4 megs low on 20M and no adjustment is left!. To put it another way, it's a nice -- but costly -- dummy load.

Because I don't want to go to the extra labor (not to mention expense) of a major tower upgrade -- unless I have to -- so, at this point I want to look at beams smaller than the TH7's.

I would appreciate your personal (or that of other hams known by you) comments on "CURRENT" manufacture. I say, "current" (say, last 5 yr or so) because too much has changed over the years in durability, quality and performance. For example, every bit of evidence available to me shows TELREX's massive quality and support deterioration. True or not, I rule them out. Also, please DO NOT refer me to printed reviews. I trusted them -- that's what got me into the mess I'm in now! I need your experience. That,I trust!

Your thoughts please on: KLM (34-A) -- the smallest physical size of the bunch; Hy-Gain (Explorer, TH5); and Mosely (CL and Pro series only). There may be another maybe "Force 12" (?). I'll leave that to you.

72/73,
Myron N8DHT

From ab4el.com Thu Jun 9 09:04:52 1994
From: bob.berlyn@chowda.com (Bob Berlyn)
Subject: HW-7 MODS

On 01-01-00 QRP@Think.COM wrote...

Q > From: meh@cbsms1.cb.att.com (m.e.hartwell)
Q > To: QRP@Think.COM
Q > Date: 8 Jun 1994 14:03 EDT
Q > Subject: HW7 receiver
Q > Sender: qrp-bounce@Think.COM
Q > Precedence: bulk
Q >
Q > Hello
Q >
Q > I have a HW7 I would like to start using again. I wonder if anyone
Q > has any information on improving the front end of the receiver. At one
Q > time
Q > there were some articles on doing that but I have misplaced them now,
Q > and maybe now there are newer ways to improve the thing.
Q >

Q > Marty
Q >

Marty,

As it happens I have a Mod for the HW-7 from ARRL. Published in QST Jan 1974.

This artical has several MODs including the receiver front end. If you cant find them let me know and I'll send them to you.

ALSO does any one know why I am getting all this bounced mail ? note the header.

Later

* OFFLINE 1.54 * Bob Berlyn N1PWU Bob.Berlyn@Chowda.com

.....

From ab4el.com Wed Jun 8 14:10:21 1994
From: meh@cbsms1.cb.att.com (m.e.hartwell)
Subject: HW7 receiver

Hello

I have a HW7 I would like to start using again. I wonder if anyone has any information on improving the front end of the receiver. At one time there were some articles on doing that but I have misplaced them now, and maybe now there are newer ways to improve the thing.

Marty

From ab4el.com Fri Jun 3 09:17:11 1994
From: JDuffy@aol.com
Subject: Index address correction

Whoops, sorry folks....the city is Gig Harbor not Gifg. That was a typo.

.....Duffy de WB8NUT

From ab4el.com Sun May 29 11:47:09 1994
From: JDuffy@aol.com
Subject: Index Laboratories QRP Rig

Just received my new Index Labs QRP+ rig. Is anyone else out there using the

rig? Sure would like to talk with the other 170+ (and growing) number of users. This is a hellova rig.

de Duffy, WB8NUT

From ab4el.com Thu Jun 2 16:41:05 1994
From: JDuffy@aol.com
Subject: Index Labs address and phone

Many of you have asked for more information of the new Index Labs QRP rig.
 Also, you have asked how to get in touch with Index Labs.
So here's the scoup:

The rig is shaped like a big brick. It is 5 1/2" wide x 4" high and 6" deep.
 It has an LCD display, XIT, RIT, 20 memories, built in keyer, up to 5 watts output on SSB and CW, SCAF Digital Audio Filters with variable bandwidths from 100 hz to 2400 hz, full break-in on CW, receive attenuator, analog meter, and 4" speaker with plenty of audio. Receiver continuously tunes from 1.8 to 29.7 mhz. Transmits on all amateur bands with overlap at each end.
 Current drain on receive is only .14A and 1.5 A (@ 5 watts) on transmit.
 This is a serious QRP rig.   The rig is solidly built with high quality components. Price for all this is $595 and it is NOT a kit. I think the price is a steal but that is a relative statement.

You can reach Index Labs at 206-851-5725. Their address is 9318 Randall Drive N.W., Gifg Harbor, Washington 98332.

----Duffy de WB8NUT

From ab4el.com Tue Jun 7 13:21:16 1994
From: dgf@netcom.com (David Feldman)
Subject: Index Labs QRP PLUS - received brochure

Just received QRP PLUS product brochure from INDEX LABS (in Wash. state).

Front:

picture of unit - dimensions 5-1/2"W 4"H 6"D.
Controls: Switches - 20 dB atten/normal, Xcv/split/RIT mode select
             Adjustments - Frequency knob, volume
             Buttons - Fast (rate), Memory, (both = memory store)
             More buttons - Reverse, bandwidth
             (some buttons work in conjunction with tune control)
             S-meter (edge) and phones jack.
             Display is LCD with 100 Hz resolution.

Key bullets: 5W CW/SSB 160M-10M Switched Cap Audio Filter 100-2400 Hz
             12V 140mA RX current, 20 memories, full break-in.

Reverse:

Description of the front-panel controls (buttons, switches & adjustments)
and sample operating scenarios for frequency control.

Other -

Power required 12V at 1.5A TX, 140 mA RX

"A unique single conversion up-converting design provides exceptional
receiver performance with a significant reduction in size, cost and power
consumption"

"Separate connectors and an internal jumper allow the QRP PLUS to be
conveniently interfaced with VHF/UHF transverters and external linear
amplifiers."

Other:

I called them and discovered it has no noise blanker (=no sale for me)
I did not ask about computer remote control (i.e., RS-232 port).
I did not ask about shipping schedule. (lack of NB killed it immediately for me)

Info:

Index Laboratories (206) 851-5725 9318 Randall Dr. NW
Gig Harbor, WA 98332

Hope this is useful.

73 Dave WB0GAZ dgf@netcom.com (Denver DM79)

From ab4el.com Tue May 31 07:42:48 1994
From: C=BAILEY%IS%211EIS@PAMDT.ANG.AF.MIL
Subject: INFO ON "WIREMAN"

For those interested,

The Wireman, Inc.
261 Pittman Road
Landrum, SC 29356

Tech Help (803)895-4195

Orders Only (800)727-WIRE, (800)433-WIRE

P.S. "The Wirebook" is a catalog/handbook, it's worth considering.

I am not affiliated with or own any interest in this company....info only.
I use "The Wirebook" on the job as a training aid to install connectors.

KT3A, Cameron.

From ab4el.com Thu Jun 2 14:49:41 1994
From: Alan Kaul <kaul@netcom.com>
Subject: Intergalactic Field Day (fwd)

Hi, ALL> attached is from another reflector (contesting) where the discussion has been raging on whether or not field day in Europe (this week) should be combined with field day in USA (at end of June). I forward it here because the author is suggesting a real field day for battery operated QRP.

[<Alan Kaul, W6RCL>] kaul@netcom.com

---------- Forwarded message ----------
Date: Thu, 2 Jun 94 10:55:16 EDT
From: robert penneys <penneys@freezer.cns.udel.edu>
To: cq-contest@tgv.com
Subject: Intergalactic Field Day

It certainly can be appalling watching a thread take off on whatever dubious topic.

My vote is certainly NOT to escalate Field Day into a more competitive, exclusive event for a dwindling amount of participants. Those of us who want to knock ourselves out have every opportunity, and the rest should have as much fun and socializing as possible, perhaps to have a pleasant taste of amateur radio.

So, please listen closely for the N.E.R.D.S. first battery powered QRP effort. I've wanted to try it for a couple of years.

Bob

Bob Penneys, WN3K Frankford Radio Club Internet: penneys@pecan.cns.udel.edu
Work: Ham Radio Outlet (Delaware) (800) 644-4476; fax (302) 322-8808
Mail at home: 12 East Mill Station Drive Newark, DE 19711 USA

From ab4el.com Thu Jun 2 15:28:22 1994
From: "JEFF M. GOLD" <JMG@tntech.edu>
Subject: Jeff Herman Projects

all,

I have had a ham who doesn't have access to the full internet
functionality request I send him a file with all the Jeff Herman
projects.. I got to it via WWW.. but don't have the hours I need
to download each file, combine them and then retransmit.. anyone
have all the projects as a single file?

thanks

73

Jeff, AC4HF

From ab4el.com Thu Jun 2 17:24:25 1994
From: Bruce Walker <bruce@Think.COM>
Subject: Jeff Herman Projects

> Date: Thu, 02 Jun 1994 14:28:46 -0500 (CDT)
> From: "JEFF M. GOLD" <JMG@tntech.edu>
>
> all,
>
> I have had a ham who doesn't have access to the full internet
> functionality request I send him a file with all the Jeff Herman
> projects.. I got to it via WWW.. but don't have the hours I need
> to download each file, combine them and then retransmit.. anyone
> have all the projects as a single file?

anonymous ftp at think.com, in /pub/radio/ham/qrp/qrp-projects.

--bruce WT1M

From ab4el.com Thu Jun 2 21:49:52 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: Jeff Herman Projects

That's a good idea, Jeff. I added a way to get all of the projects in one
text file.

Via WWW:

http://www.cwru.edu/0/activities/w8edu/herman.projects

Via Gopher:
Name=Jeff Herman's QRP Projects (all in one file)
Type=0
Path=0/activities/w8edu/herman.projects
Host=gopher.cwru.edu
Port=70

The pointers I gave last time still work fine for browsing.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IH

Whenever the literary German dives into a sentence, that is the last you are going to see of him until he emerges on the other side of his Atlantic with his verb in his mouth.
-- Mark Twain, "Connecticut Yankee in King Arthur's Court"

From ab4el.com Thu Jun 9 03:12:14 1994
From: Roger Traylor <rlt@SSD.intel.com>
Subject: JOY OF QRP... reprints anybody?

Gang,
Adrian Weiss recently wrote......

> Unfortunately, THE JOY OF QRP has been out of print for many years -- in
> fact, all 2200 copies went in under two years. As I understand the situation,
> it is next to impossible to find anyone willing to part with their copy.
> I might as well add a general announcement that might help. As copyright
> owner of JOY, I have absolutely no objections to anyone making xerox copies
> for a friend or other contacts.

Well, how about it? Will somebody be my friend and make a copy for me? I'll gladly pay copy costs, postage and a little for your trouble. Being an old reader of the original Milliwatt, seeing this would sure make me happy and nostalgic.

Roger Traylor WB4TPW
rlt@ssd.intel.com

From ab4el.com Thu Jun 2 17:59:39 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: K5FO Newsletter

On the previous post. My error only effected 11 people out
of 115. So I guess I get a B+. :-) Those 11 people are
very important, so I'm sorry.

dit dit
Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Thu Jun 2 23:50:26 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: K5FO Newsletter

If you subscribed, you will get #1. No problem.

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Thu Jun 2 16:41:10 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: K5FO Newsletter V1#1

Gang,

I sit here redfaced. If you remember the week that I sent out
number 1 I was in TX and then CA. Well, as it turns out, I
messed up. Some of you did not receive your first issue due
to a clerical error (I screwed up). I have put them in the
mail today. I will promise to do better tomorrow on issue #2.

My sincere apologies. If you aren't making mistakes you aren't
doing anything. HEY, if it was easy everybody would be doing it.

dit dit
Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Thu Jun 2 12:40:38 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: K5FO/6

Gang,

Sorry to broadcast this, but it's the only way I see
to do it.

The San Jose crowd. Next week, Tuesday, June 7th,
at the restaurant "Two Guys from Italy" at 7pm local.

I'll be there and Doug Hendricks will be down from
Dos Palos and hopefully Wayne Burdick can make it
also. Show and tell time. Bring a rig, bring a
camera, and bring yourself (most important of all).

I believe the restaurant is on Rio Grande Ave/Blvd (?).
Locals can give us directions on the mail server here.

Now all the rest of you guys/girls on the mail server.
You too can let us know when you're traveling and
broadcast it. Never know who you'll meet and isn't
it what it's all about? Fun, Food, and Fellowship.
It doesn't get any better than this.

Bon Appetito (excuse my Italian),

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Thu Jun 2 15:36:42 1994
From: janderson@polycom.com
Subject: Re: K5FO/6

> The San Jose crowd. Next week, Tuesday, June 7th,
> at the restaurant "Two Guys from Italy" at 7pm local.

Is this the restaurant in Mountain View? If so, it's in the shopping center on
the SW corner of Grant Road and El Camino (and only about 4 blocks from my

house!).

Or is there another "Two Guys..." in the South Bay?

Let me know! It would be fun to meet you and other South Bay QRPers.

- Jeff, WA6AHL

From ab4el.com Thu Jun 2 23:48:45 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: Re: K5FO/6

Jeff,

Grant Road and El Camino it is. Everybody be there and be
square at 7pm sharp. Well, plus/minus. :-)

This is in Mt View next Tuesday.

dit dit
Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Fri Jun 3 12:24:14 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: K5FO/6 Soiree

Wow, such a big word. To all attendees. I'll bring
free copies of the K5FO newsletter. How is that for
an awards program? dit dit
Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Fri Jun 3 09:54:16 1994
From: C=BAILEY%IS%211EIS@ANG193FS.ang.af.mil
Subject: KT3A/9

Hello,

I'll be in Chicago on business 6 to 10 June. Any qrp'ers interested in a get
together? Any club meetings that week?

73/72 de Cameron, KT3A

From ab4el.com Sun Jun 5 10:34:03 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: KU7Y @ 250mW

Ron and the group,

Monroe, OR 44.314 N 123.296 W
Meridan,ID 43.612 N 116.391 W

total distance of 557 KM or 346 Miles

thus Miles/Watt = 4 * 346 = 1,384

Send me $2 and photo copy of QSL card.

dit dit
Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Thu Jun 9 08:25:45 1994
From: "Evert Halbach" <CS-ERH@nich-nsunet.nich.edu>
Subject: Lat/Lon Bearings

Anyone know of any software that would give you distances between
two points when the Lat and Lon of both locations are plugged in???

        Thanks es 73s de WA5OJI Evert

        Evert R. Halbach   WA5OJI
Internet - cs-erh@nich-nsunet.nich.edu
Phone   - (504) 448-4999
Snail   - P.O. Box 2168   Thibodaux, La. 70310

From ab4el.com Thu Jun 9 12:17:27 1994
From: Thang Le <tl@hprnd.rose.hp.com>
Subject: Re: Lat/Lon Bearings

>

> Anyone know of any software that would give you distances between
> two points when the Lat and Lon of both locations are plugged in???
>
>   Thanks es 73s de WA5OJI Evert
>
>
>
>   Evert R. Halbach   WA5OJI
> Internet - cs-erh@nich-nsunet.nich.edu
> Phone   - (504) 448-4999
> Snail   - P.O. Box 2168   Thibodaux, La. 70310
>

Here is a copy I saved from the net a while ago.
--
Best regards,

Thang Le
tl@hprnd.rose.hp.com

```
/*
 *      gc.c  compile with cc gc.c -lM
 *
 *      Great Circle.  This program is used to determine bearing
 *      and range to a station given latitude and longitude.
 *
 *      Ver 1.03 By S. R. Sampson, N5OWK
 *      Public Domain (p) November 1989
 *
 *      Ref: Air Force Manual 51-40, "Air Navigation", 1 February 1987
 *
 *      Usage examples:
 *
 *      gc 35.19n97.27w 0s0e            (Moore to Prime/Equator)
 *      gc 35.19N97.27W 38.51n77.02W    (Moore to Washington D.C.)
 *      gc 33.56n118.24w 55.45n37.35e   (L.A. to Moscow U.S.S.R.)
 *      gc 35N70W 35N71W                (No decimal points used)
 */

/* Includes */

#include <stdio.h>
#include <string.h>
#include <ctype.h>
#include <math.h>

/* Defines */
```

```
#define RADIAN  (180.0 / M_PI)

/* Globals */

double  tmp,
        dist,
        range,
        bearing,
        QTH_Lat,
        QTH_Long,
        DEST_Lat,
        DEST_Long,
        Delta_Long;

/* Simple Declare, No Prototypes */

/*
 *      Error routine
 */

void err(type)
int     type;
{
        switch(type)  {
        case 1:
                printf("\007Latitude Out of Range (90N to 90S)\n");
                break;
        case 2:
                printf("\007Longitude Out of Range (180W to 180E)\n");
                break;
        case 3:
                printf("\007Minutes Out of Range (0 to 59)\n");
        }

        exit(1);
}

/*
 *      Convert Degrees and Minutes to Decimal
 */

double dm2dec(n)
double  n;
{
        double  t;

        t = (int)n;
        n -= t;
```

```
        n /= .60;

        if (n >= 1.0)
                err(3);

        return (n + t);
}

/*
 *      Parse the input line
 *
 *      dd(.mm)[NnSs]ddd(.mm)[EeWw]
 */

void parse(s, lat, lon)
char    *s;
double  *lat, *lon;
{
        register char   *i, *t;
        int             l;

        l = strlen(s);
        for (i = s; i < (s + l); ++i)  {
                switch(toupper(*i))  {
                case 'N':
                        *i = '\0';
                        t = i + 1;
                        *lat = atof(s);
                        break;
                case 'S':
                        *i = '\0';
                        t = i + 1;
                        *lat = -atof(s);
                        break;
                case 'E':
                        *i = '\0';
                        *lon = -atof(t);
                        break;
                case 'W':
                        *i = '\0';
                        *lon = atof(t);
                }
        }

        *lat = dm2dec(*lat);
        *lon = dm2dec(*lon);

        if (*lat > 90.0 || *lat < -90.0)
```

```
                err(1);

        if (*lon > 180.0 || *lon < -180.0)
                err(2);

        /* Prevent ACOS() Domain Error */

        if (*lat == 90.0)
                *lat = 89.9;

        if (*lat == -90.0)
                *lat = -89.9;
}

main(argc, argv)
register int  argc;
register char **argv;
{
        if (argc != 3)  {
                printf("Usage: gc station1 station2\n\n");
                printf("This program computes Great Circle Bearing and Range\n");
                printf("given the latitude and longitude (degrees and minutes).
\n\n");
                printf("You must input the lat/long of the two stations.\n");
                printf("The output will then be relative from station1 to
station2.\n\n");
                printf("Input the two station lat/longs using the following
format:\n\n");
                printf("\tdd.mmHddd.mmG  lead/lagging zeros can be left out.
\n\n");
                printf("d = Degrees, m = Minutes, H = Hemisphere (N or S), G =
Greenwich (W or E)\n");

                exit(1);
        }

        /* Process the command line data */

        parse(argv[1], &QTH_Lat, &QTH_Long);
        parse(argv[2], &DEST_Lat, &DEST_Long);

        /* Compute the Bearing and Range, From the Formula in Chapter 23 */

        Delta_Long = DEST_Long - QTH_Long;

        QTH_Lat    /= RADIAN;   /* Convert variables to Radians */
        QTH_Long   /= RADIAN;
        DEST_Lat   /= RADIAN;
```

```
        Delta_Long /= RADIAN;

        tmp = (sin(QTH_Lat) * sin(DEST_Lat)) +
                (cos(QTH_Lat) * cos(DEST_Lat) * cos(Delta_Long));

        dist = acos(tmp);
        range = 60.0 * (dist * RADIAN);

        tmp = (sin(DEST_Lat) - (sin(QTH_Lat) * cos(dist))) /
                (sin(dist) * cos(QTH_Lat));

        bearing = acos(tmp) * RADIAN;

        if (Delta_Long > 0.0)
                bearing = 360.0 - bearing;

        /* Computations complete, show answer */

        printf("\nBearing is %.0f Degrees for %.0f Nautical Miles\n",
                bearing, range);

        exit(0);
}

/* EOF */
```

From ab4el.com Thu Jun 2 10:42:19 1994
From: Tom_Jennings <jennings@eng16.rochny.uspra.abb.com>
Subject: Loop Antenna

Hi QRPers

I am gathering the parts for the "Compact Loop Antenna for
30 through 12 Meters" which was written up in the May, 1994
QST. I will be using it for my 20 Meter NN1G rig.

I was wondering, before I get too far along, if any one
built it and if someone did: Any hints in building it? and
how does it perform?

Thanks and 73

TJ, kv2x

--

```
-------------------------------------------------------------
                                |
Thomas J. Jennings              | Tel: (716) 273 7071
```

Development Engineer | Fax: (716) 273 7262
|
ABB Process Automation |
Post Office Box 22685 |
Rochester, New York 14692-2685 |
|

Internet: jennings@jennings.rochny.uspra.abb.com

From ab4el.com Thu Jun 2 13:06:42 1994
From: jz560c@sun55.hqs.mid.gmeds.com (Eric Bates)
Subject: Re: Loop Antenna

----- Begin Included Message -----

< stuff deleted >

Hi QRPers

I am gathering the parts for the "Compact Loop Antenna for
30 through 12 Meters" which was written up in the May, 1994
QST. I will be using it for my 20 Meter NN1G rig.

I was wondering, before I get too far along, if any one
built it and if someone did: Any hints in building it? and
how does it perform?

Thanks and 73

TJ, kv2x

< more stuff deleted >

----- End Included Message -----

Tom,

I have a version up and running and parts for a second laying around. I use the one on 15 and 20 meters and it works fine. As I also have an MFJ tuner in the path there somewhere, I don't seem to have any real problems tuning down to a virtual 1:1 ratio. Signal reception is very good, but is also very directional (ie. from my QTH just north of Detroit, I hear LA and TX great, but nothing off the sides). I was going to attempt to have two set up, one pointing N-S and the other E-W and use a coax switch or some other means to change which one I use to somewhat compensate for the directional nature of my installation.

I don't know if I'd highly reccomend it. A full-fledged beam would obviously be better, but as I need to camoflauge my operations it serves my purposes well.

73/CUL,

Eric
AA8MD

From ab4el.com Thu Jun 9 16:12:29 1994
From: sas@opus.xyplex.com (Scott Sminkey - Sustaining Eng Group)
Subject: Loop Antenna review (long)

Tom Jennings KV2X asked if anyone had built the compact loop antenna featured in the May 1994 QST. Art NT1M and I recently finished building two of them so I thought I'd give it a review on the list...

The executive summary is that the 30-12m compact loop antenna works well and is a straightforward construction project. The antenna performs well enough to serve as a primary antenna for where a "normal" antenna cannot be used, such as an apartment or condo. An antenna tuner must not be used with the compact loop and if built properly is not needed anyway. The author of the QST article also provides dimensions for a 40-20m version, but he apparently did not build and test one. The one I built tunes and works ok on 40m, but I'm having problems on 30m and 20m.

The May 1994 QST article is light on the theory or compact loop antennas, and instead focuses on how to build a compact loop using readily available materials and components. The Summer and Fall 1993 issues of Communication Quarterly contain a two-part article on the theory and construction of a compact loop antenna. This article is very good reading if you really want to know how a compact loop antenna works.

Construction of the antenna is straightforward and will take a whole afternoon to complete. PVC (plastic) pipe is used for the stand and the boom. Copper refrigeration tubing is used for the loop. A small coupling loop is made from a short length of RG8-sized coax. (I had RG-213 so I used that.) A 100 pf variable capacitor is used for resonating the loop. Some copper braid, like the braid left over from making the coupling loop, a plastic box and some miscellaneous hardware complete the parts list. Except for the variable capacitor, you can get all the parts for about $25.

The QST article does not specify the type of PVC tubing to be used. Three types are commonly available: a grey type specified for use

as electrical conduit, Schedule 40 (white) used for drain pipes, and CPVC (beige) used for water supply lines. I used one-inch schedule 40 nearly everywhere, i.e., for the stand and boom, because it is the most rigid of the three types. I had to use a CPVC 1/2 inch coupler to connect the open ends of the copper loop because a 1/2 inch schedule 40 coupler was too large.

The copper tubing is of the type used for refrigeration or gas piping. It comes in coils and is often sold boxed in lengths like 10 or 20 feet. The 10 foot length is good for the smaller loop and 20 feet is fine for the larger loop. Be sure to inspect the coil you buy for kinks and dents. I rejected all but one box I checked at two stores until I found a good one. The QST article specifies 5/8 inch *outside* diameter tubing. If you have a caliper, bring it with you when you go for tubing because it appears that tubing is not always labeled clearly as to inside or outside diameter.

Work carefully when uncoiling the copper and apply any bending force along a large radius. You could fill the tube with sand before bending if you're very worried about kinking. It wasn't clear how to connect the CPVC 1/2 coupler to the copper ends. I used five-minute epoxy which held fine. Remember to rough up both the copper and the inside of the CPVC coupler with rough sandpaper before applying epoxy and let it dry thorougly.

Because the radiation resistance of a compact loop is on the order of milliohms, the "ohmic losses" in the system are important to consider. Any connection carrying RF should be big and attached using as low resistance a method as possible. Welding is best and brazing is next best, but having no equipment for either, I resorted to soldering with a torch. Where the braid from the variable capacitor was to connect to the loop, I soldered on 1/2 inch wide brass strips and did the same where the coupling loop is attached. The brass braid should be soldered and not screwed to the variable cap.

The variable cap was mounted in a plastic box. The top and the bottom of the loop and the plastic box were attached to the PVC boom using a "non-slip" type of nylon cord using in making fishing nets. The QST article called for other methods like plastic wire ties and bolted-on copper strap, but the nylon cord made a strong, no-movement connection that was more attractive as well.

There is a lot of voltage developed across the variable capacitor -- over 4 kV for 100 watts -- so the capacitor will need good spacing to run the typical 100 watts. The BASIC program in the Communications Quarterly article is handy for determining the exact voltage rating needed for the variable, as well as several other useful parameters for a loop.

The tuning of the loop is very sharp! A vernier knob makes tuning less of a chore. Preliminary tuning can be done by adjusting for a noise or signal peak in the receiver. Fine tuning requires a watt meter or SWR bridge. Of course, use low power and be careful when making adjustments while transmitting so you don't touch the loop and risk getting an RF burn. Your body and especially the arm you are tuning with will detune the loop, so you'll have to do a "tune and step back" dance to get spot on.

As expected, less capacitance is needed on the higher bands. If you can find a variable cap whose minimum capacitance is zero or close to it, you might make 10m on the loop. We didn't. Apparently, most variable capacitors have some residual capacitance even when fully open and that is more than is needed for 10m. The BASIC program can show you the theoretical capacitance needed for a given frequency. We needed less in every case on both the small and large loop.

The small loop for 30-12m loaded up just fine on all bands from 30 to 12 meters with a very low SWR possible. Adjusting the shape of the coupling loop might be necessary to get the best possible match. Do not be tempted to use an antenna tuner with the loop! The loop has a very high Q, i.e., a narrow bandwidth, so even though the tuner may allow your transmitter to deliver lots of power to the loop, unless the loop itself is resonant, it will probably be quite deaf on receive. The variable capacitor on the loop *is* the tuning method.

If you have trouble getting the loop to resonate anywhere, be sure to check all connections to make sure they are sound. Replace any and all screwed down connections with solder, brazed, or welded ones. Try adjusting the shape of the coupling loop (squash it down or stretch it out). Be sure the loop is away from everything, conducting or not. Note that vertical orientation is preferred unless the loop is 1/4 wavelength or more above the ground. As a last resort, the length of the loop could be shortened, but extending it by sweat soldering a copper coupler and more tubing is not recommended again due to ohmic losses.

Art and I finished the small loop on Sunday, May 29, and put it on the air during the CQ WPX CW contest. Art was working stations on on 20 and 15 meters from several areas in the USA, Caribbean, and (I think) Europe with about 25 watts, catching most of them on the first or second reply. I suppose his call being NT1M helped to get some attention! The loop is very directional when mounted vertically. Contrary to our intuition, the main lobes are in the same plane as the loop and the nulls are perpendicular to that plane!

I made the large loop on Monday. Conditions were pretty bad but I

worked a guy in Michigan on 40m and got a 58 report with 100 watts. The large loop tuned up perfectly on 40m. On 30m, the best SWR I could get was about 3:1. It would appear that even the residual capacitance of the variable cap I used will be too much for 20m, since the cap was open about 90 percent for 30m. Nevertheless, I plan to continue debugging the large loop to hopefully get a better match on 30m using all the hints I mentioned above.

In summary, the 30-12m loop can't compete with a yagi on a tower, but it's a good performer that can certainly serve as a reasonable primary antenna. It's ideal for apartment dwellers or covenant-restricted neighborhoods and can easily be carried in a car for portable setups. I think I'll build a mobile mount for it next!

   73,
   Scott WO1G
============
Scott Sminkey email: sasminkey@eng.xyplex.com
Software Sustaining Engineering voice: 508 952-4792
Xyplex, Inc. fax: 508 952-4887
295 Foster St. (Opinions, comments, etc. are mine,
Littleton, MA 01460 not Xyplex's...)

From ab4el.com Sun May 29 05:38:40 1994
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Subject: Mail failure

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Date: Sat, 28 May 1994 7:58:25 -0400 (EDT)
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Message-Id: <Pine.3.89.9405281024.A15162-0100000@netcom6>
Mime-Version: 1.0
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End of QRP Digest V0 #110
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From: william r finch <wrfin@firefly.prairienet.org>
Date: Sun, 29 May 1994 07:57:17 -0500 (CDT)
Subject: Callsigns

Just wondering if somebody in 2-land can tell me what kind of calls
extras are getting there. I will probably be relocating to NY, and was
curious. TNX, es 73s

Bill Finch
KF9KI
Champaign, Il
wrfin@prairienet.org

From: JDuffy@aol.com
Date: Sun, 29 May 94 11:46:54 EDT
Subject: Index Laboratories QRP Rig

Just received my new Index Labs QRP+ rig. Is anyone else out there using the
rig? Sure would like to talk with the other 170+ (and growing) number of
users. This is a hellova rig.

de Duffy, WB8NUT

From: Yehuda Harper <jrh@owlnet.rice.edu>
Date: Sun, 29 May 1994 11:23:31 -0500 (CDT)
Subject: Antenna Matching

I recently built a 20 meter rock bound CW transmitter. Using a Diamond watt
meter, I measure an output power of 1.75 watts into a dummy load. However,
when I feed the signal into a dipole and match the SWR to 1:1, the measured
output drops to 1.25 watts. If I mismatch the antenna to a 3:1 SWR, I get
a measured output of 2 watts. Questions:

1) Why the differences? Why does the power output go up with a mismatch?

I would expect the opposite. I've checked the output filter of the transmitter and the # of windings on the torroids and the capacitor values are correct for 20 meters.

2) Am I getting correct power readings?

3) Should I run the transmitter at 2 watts out into 3:1 SWR or 1.25 watts out into 1:1 SWR. The output transistor doesn't seem to overheat either way.

Jim/KB5CTQ

From: "H. Ward Silver" <hwardsil@seattleu.edu>
Date: Sun, 29 May 1994 09:23:57 -0700 (PDT)
Subject: Re: Gain due to mountaint

> Unless you're talking about Lake Superior! The Minnesota North Shore has
> intrigued me as a possibility for antennas. What about a sloping wire (half
> wave at 160 meters) from a cliff down to the water's edge? Haven't followed
up
> on this, but have seen some neat cliffs that climbers were using and wondere
d...

As the water surface helps mostly in the directions across it, Lake Superior from the southern shore isn't going to do you much good in Field Day. However, there are a number of peninsulas which extend out into the lake which would be quite good for propagation in many directions. If you could find a cliff with exposure across water to the south, so much the better.

GL, Ward N0AX

From: James Speer <F_SPEERJR@CCSVAX.SFASU.EDU>
Date: Sun, 29 May 1994 12:48:38 -0500 (CDT)
Subject: MILLIWATT RIG INFO NEEDED

You might suggest to your friend that there are a number of good books with suitable circuits around. E.g., Hayward & Demaw's _Solid State Design for the Radio Amateur_. Might also suggest dead bug construction for something that goes together quickly and works well. Might finally suggest TWO transistors -- why would you EVER choose to key the oscillator (chirp, chirp)...

72!
Jim   K5YUT
 P. S. See p. 27 in Hayward & DeMaw for "the universal QRP transmitter." Any band from 160 to 10; DOES key the oscillator on the lower bands, but not the higher; uses 2 or 3 transistors, and once you had acquired a crystal and wound a couple of inductors, could be glued together in an hour. Guess my poin
t
is that it's not very much harder to build something that will provide real satisfaction for a long time.

From: Alan Kaul <kaul@netcom.com>
Date: Sun, 29 May 1994 22:58:16 -0700 (PDT)
Subject: WPX

Hiya, ... ran 5-watts for 5-hours (a little Friday nite, a little Saturday morning and a little Sunday afternoon) ... and appropriately enough racked up 72 QSO's! Got some good ones on 40m -- JA, VK, YB, 20-and-15 had a lot of Carribean activity -- 6Y, NP2, KG4, KP4, VP2
and 10 yielded 3- L's (Argentina) stations!
Propagation folks say there was a solar flare. And I did not hear any of the QRP Internet gang (maybe they were saving themselves for the sprint).
73, 72 de alan

        72 Q's   62 Prefixes = 8,680 points

                    <Alan Kaul, W6RCL>! kaul@netcom.com

End of QRP Digest V0 #111
****

From ab4el.com Tue May 31 07:06:09 1994
From: "POSTMASTER" <HARRIS.POSTMAS8@IC1D.HARRIS.COM>
Subject: Mail failure

From: "W. Daniel" <pandora!daniel@Think.COM>

Date: Mon, 30 May 1994 04:13:42 SST
Subject: NN1G audio output question.

Hi Gang,

This is a question regarding the audio output of the NN1G RX board. Why does the output comes from the 10 ohm resistor instead of the usual pin 5 of the LM-386? Is there a reason for this? Or is it an error?

From what I understand, the 10 ohm resistor with the 22 uF cap forms the Zobel Network and the output really should NOT come from there. In fact most other circuits have their output coming from pin 5. Does anyone know the reason behind this?

I would like to drive a speaker so I was wondering if it would be possible for me to take the output from pin 5, nothing else barring.

Please comment. Tks.

73,
Daniel
- --

+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+--------------------------------------+

From: "W. Daniel" <pandora!daniel@Think.COM>
Date: Mon, 30 May 1994 04:26:59 SST
Subject: NN1G RIT

Hi Gang,

Just FYI, I managed to get my RIT for the NN1G working, gives me +- 1 kHz on the VFO. Works beautifully. Uses:-

1	MV2106 or MV2104 or MV2105
1	2N3906 PNP transistor
1	IN914 or IN4148 small silicon signal diode
3	10k 1/4 watt carbon film resistor
2	100k 1/4 watt carbon film resistor
1	33k 1/4 watt carbon film resistor
1	10k linear variable resistor
1	10pF NPO ceramic disc capacitor
1	0.001uF ceramic/mylar capacitor

1 0.1uF capacitor (any monolithic type)

Lesee if there is enough interest to get me to post the mod (if there isn't one already). This mod can be done without soldering to the board. Needs soldering to the air variable though.

Now, I am gonna add an audio filter to this thing to see what happens. Next will be a little modified TX PA section.

73,
Daniel
- --
+-------------+-------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
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Date: Sat, 28 May 1994 10:39:37 -0700 (PDT)
Subject: WPX Contest and QRP activity

From: ?<Alan Kaul, W6RCL>! kaul@netcom.com

Message-Id: <Pine.3.89.9405281024.A15162-0100000@netcom6>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

The QSO's are slow, the propagation isn't very good and either there are VERY FEW Internet QRP ops on, or propagation to QRP stations is REALLY BAD.

Last night 40M produced QSO's w/ VK, JA, YB, TI, KL7 and many Canadian prefixes. Ten sounds dead at my QTH this morning, 15 and 20 have been North America only for me -- but I have heard some Europe on 20, just can't seem to work em. QSO total after 3-hours on-air: fewer than 50. Come on in! CUL, 72 de alan

?<Alan Kaul, W6RCL>! kaul@netcom.com

- - ------------------------------

From: Stephen Trier <sct@po.cwru.edu>
Date: 28 May 1994 22:32:05 GMT
Subject: Re: MILLIWATT RIG INFO NEEDED

Jeff's collection of transmitter projects is available in gopher and WWW from the CWRU gopher/WWW server. Here are the links:

Name=Jeff Herman's QRP Projects
Type=1
Path=1m/activities/w8edu/herman.projects
Host=gopher.cwru.edu
Port=70

The "More Projects" menu is extensions to Jeff's projects, plus whatever other projects I see online that I think are interesting and worth preserving.

Name=More Projects
Type=1
Path=1m/activities/w8edu/more.projects
Host=gopher.cwru.edu
Port=70

Both of these are off of the W8EDU menu:

Name=W8EDU, the Case Amateur Radio Club
Type=1
Path=1/activities/w8edu
Host=gopher.cwru.edu
Port=70

If you are a WWW user (that includes Mosaic), use these URLS:

QRP Projects http://www.cwru.edu:70/1m/activities/w8edu/herman.projects
More Projects http://www.cwru.edu:70/1m/activities/w8edu/more.projects
W8EDU Page http://www.cwru.edu:70/1/activities/w8edu

Enjoy! I wouldn't mind collecting more projects on this site, if you have suggestions.

Stephen

- - - --
Stephen Trier Whenever the literary German dives into a sentence, that is
sct@po.cwru.edu the last you are going to see of him until he emerges on the
KG8IH other side of his Atlantic with his verb in his mouth.
-- Mark Twain, "Connecticut Yankee in King Arthur's Court
"

- - ------------------------------

From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Date: Sat, 28 May 94 15:50:00 HST
Subject: DeMaw's 40M VFO

Gang: Has anyone built the 40M VFO in QRP NOTEBOOK (pages 29-30)? It calls for a couple MPF102's (RS has them) and a 2N222A (I've got plenty), and I can scrounge the remaining components.

I'm going to use point-to-point wiring rather than a PC board.

Please let me hear from you if you've built one.

.73,
Jeff NH6IL

- - ------------------------------

From: BHOWLE@delphi.com
Date: Sat, 28 May 1994 22:18:23 -0400 (EDT)
Subject: Classic - TR Board - R342 ???

HelP !

I've looked and looked for R 342 on my OHR Classic TR Board - can anyone help? I'm sure it's there I just can't find it!

Thanks in advance for the directions - BTW this is a -very- well done kit, much better than Heathkit quality - parts, case, board and instruct-ions are all first rate.

TNX - Bob - WA4ZID

- - ------------------------------

End of QRP Digest V0 #110
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- --

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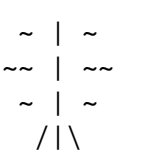
From: william r finch <wrfin@firefly.prairienet.org>
Date: Sun, 29 May 1994 07:57:17 -0500 (CDT)
Subject: Callsigns

Just wondering if somebody in 2-land can tell me what kind of calls
extras are getting there. I will probably be relocating to NY, and was
curious. TNX, es 73s

Bill Finch
KF9KI
Champaign, Il
wrfin@prairienet.org



- ------------------------------

From: JDuffy@aol.com
Date: Sun, 29 May 94 11:46:54 EDT
Subject: Index Laboratories QRP Rig

Just received my new Index Labs QRP+ rig. Is anyone else out there using the
rig? Sure would like to talk with the other 170+ (and growing) number of
users. This is a hellova rig.

de Duffy, WB8NUT

- ------------------------------

From: Yehuda Harper <jrh@owlnet.rice.edu>
Date: Sun, 29 May 1994 11:23:31 -0500 (CDT)
Subject: Antenna Matching

I recently built a 20 meter rock bound CW transmitter. Using a Diamond watt meter, I measure an output power of 1.75 watts into a dummy load. However, when I feed the signal into a dipole and match the SWR to 1:1, the measured output drops to 1.25 watts. If I mismatch the antenna to a 3:1 SWR, I get a measured output of 2 watts. Questions:

1) Why the differences? Why does the power output go up with a mismatch?
    I would expect the opposite. I've checked the output filter of the
    transmitter and the # of windings on the torroids and the capacitor values
    are correct for 20 meters.

2) Am I getting correct power readings?

3) Should I run the transmitter at 2 watts out into 3:1 SWR or 1.25 watts
    out into 1:1 SWR. The output transistor doesn't seem to overheat either
    way.

Jim/KB5CTQ

- ------------------------------

From: "H. Ward Silver" <hwardsil@seattleu.edu>
Date: Sun, 29 May 1994 09:23:57 -0700 (PDT)
Subject: Re: Gain due to mountaint

> Unless you're talking about Lake Superior! The Minnesota North Shore has
> intrigued me as a possibility for antennas. What about a sloping wire (half
> wave at 160 meters) from a cliff down to the water's edge? Haven't followed
 up
> on this, but have seen some neat cliffs that climbers were using and wondere
d...

As the water surface helps mostly in the directions across it, Lake Superior from the southern shore isn't going to do you much good in Field Day. However, there are a number of peninsulas which extend out into the lake which would be quite good for propagation in many directions. If you could find a cliff with exposure across water to the south, so much the better.

GL, Ward N0AX

- ------------------------------

From: James Speer <F_SPEERJR@CCSVAX.SFASU.EDU>
Date: Sun, 29 May 1994 12:48:38 -0500 (CDT)

Subject: MILLIWATT RIG INFO NEEDED

You might suggest to your friend that there are a number of good books with suitable circuits around. E.g., Hayward & Demaw's _Solid State Design for the Radio Amateur_. Might also suggest dead bug construction for something that goes together quickly and works well. Might finally suggest TWO transistors -- why would you EVER choose to key the oscillator (chirp, chirp)...

72!
Jim K5YUT
 P. S. See p. 27 in Hayward & DeMaw for "the universal QRP transmitter." Any band from 160 to 10; DOES key the oscillator on the lower bands, but not the higher; uses 2 or 3 transistors, and once you had acquired a crystal and wound a couple of inductors, could be glued together in an hour. Guess my poin
t
is that it's not very much harder to build something that will provide real satisfaction for a long time.

- ------------------------------

From: Alan Kaul <kaul@netcom.com>
Date: Sun, 29 May 1994 22:58:16 -0700 (PDT)
Subject: WPX

Hiya, ... ran 5-watts for 5-hours (a little Friday nite, a little Saturday morning and a little Sunday afternoon) ... and appropriately enough racked up 72 QSO's! Got some good ones on 40m -- JA, VK, YB, 20-and-15 had a lot of Carribean activity -- 6Y, NP2, KG4, KP4, VP2
and 10 yielded 3- L's (Argentina) stations!
Propagation folks say there was a solar flare. And I did not hear any of the QRP Internet gang (maybe they were saving themselves for the sprint).
73, 72 de alan

        72 Q's   62 Prefixes = 8,680 points

                    ?<Alan Kaul, W6RCL>! kaul@netcom.com

- ------------------------------

End of QRP Digest V0 #111
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From: James Lyons <jlyons@CAM.ORG>
Date: Mon, 30 May 1994 06:37:47 -500 (EDT)
Subject: Re: Antenna Matching

On Sun, 29 May 1994, Yehuda Harper wrote:

> I recently built a 20 meter rock bound CW transmitter. Using a Diamond watt
> meter, I measure an output power of 1.75 watts into a dummy load. However,
> when I feed the signal into a dipole and match the SWR to 1:1, the measured
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> a measured output of 2 watts. Questions:
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>   out into 1:1 SWR. The output transistor doesn't seem to overheat either
>   way.
>
> Jim/KB5CTQ

I've experienced this effect before and I suspect it is due to the
presence of harmonics which register on the dummy load but not on the
frequency sensitive dipole. Mismatching can produce all sorts of high
apparent outputs but I don't believe they are real. Go with the matched
antenna and the 1.25 watts.

Perhaps someone else can give you a better explanation.

72,

Jim, VE2KN

From: ATXR@CENVMC.CENCOL.ON.CA
Date: 30 May 94 06:57:40 EXT
Subject: transportable antenna

From: Ted Rosen, Architectural Technology Department
Thanks to all who responded to my request on transportable antennas.
There is also a good article in the June 94 QST, p68-69. I will
let you know when I get the antenna working.
73 de Ted, VA3TAR

From: "JEFF M. GOLD" <JMG@tntech.edu>
Date: Mon, 30 May 1994 08:23:42 -0500 (CDT)
Subject: ARK 4

Well got real depressed Friday night and finished the ARK4..was
smart and didn't try to fire it up...

Saturday fired it up.. nothing fried..but no audio in the
receiver.. took it apart heated up a bunch of solder joints..
checked everything with a magnifying glass.. finally went to the
trouble shooting section and saw that you are suppose to have a
jumper till you get the audio filter in.. put in the jumper .. the
receiver worked fine.. got a signal coming in with a dumby load
and the power meter on my work bench..figured that was a good sign
HI HI.. the receiver was tuned.. played with the coils.. but they
were PERFECTLY set when I fired it up.. the receiver worked
great.. put in the fine tune, rit and audio filter and fired it up
again.. no audio.. started to think I needed to put the jumper
back in.. but knew better.. finally realized I hadn't put the chip
in the audio filter.. put it in and the rig worked a lot better.

Took the board over to the operating bench and hooked it up..
checked and made sure TX and REC were on the same freq.. did my
usual last minute minor tweek.. made a QSO immediately .(and this
is big power Contest weekend) after about 5 more contacts..
decided to put the cover on. Worked everyone I heard and heard
about everything that the 850 could hear...

Found the rig is a bit useless without the audio filter engaged..
like the fine tune on the ARK4 better than the buttons on the
ARK40.. actual didn't mind the thumbwheels for contesting.. liked
the detents on the fine tune. Made a couple of longer QSOs.. rock
solid VFO and good reports. Mine puts out about 5 watts. .good
looking wave form.

Was operating about 1/2 day before I realized I had built the rig

and didn't have to do any wiring of the controls.. boy do I appreciate that..not one wire (like the Norcal 40).

I think the rig has about one of the best receivers I ever built and like the way it works..

I can live with the minor inconvenience of the thumbwheels.. I thought the audio was a little weak.. only MAJOR complaint is the relays.. they are the loudest things I ever heard..ruin it for me.. I think this could be one of my favorite rigs except for this flaw.. I took the rig apart and packed it in foam.. doesn't help. I am using computer amplifed speakers.. they amplify the relay clicks also.. noticed with the headphones on .. doesn't really seem to be much of a problem. .can't really hear the clicks.. but I don't like headphones.. so have to do something about this.. my Gary Breed from 624 kits had very quiet relays.. I wonder if I can just find a plug in replacement relay...any suggestions.. or maybe come up with a solid state switching circuit.. but must be some reason Dick didn't do this.

I think the rig is very rugged, a great size for backpacking, a great kit, great quality parts, great directions.. great receiver and TX, about the easiest QRP kit to tune up but the kit has some minor flaws.

73

Jeff, AC4HF

From: "JEFF M. GOLD" <JMG@tntech.edu>
Date: Mon, 30 May 1994 08:55:15 -0500 (CDT)
Subject: contest

> From: <Alan Kaul, W6RCL>! kaul@netcom.com
>
>
> Message-Id: <Pine.3.89.9405281024.A15162-0100000@netcom6>
> Mime-Version: 1.0
> Content-Type: TEXT/PLAIN; charset=US-ASCII
>
> The QSO's are slow, the propagation isn't very good and either there are
> VERY FEW Internet QRP ops on, or propagation to QRP stations is REALLY BAD.
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> prefixes. Ten sounds dead at my QTH this morning, 15 and 20 have been
> North America only for me -- but I have heard some Europe on 20, just
> can't seem to work em. QSO total after 3-hours on-air: fewer than 50.

> Come on in! CUL, 72 de alan
>
>   <Alan Kaul, W6RCL>! kaul@netcom.com
>
>
>
Well, I got my ARK4 together in time for the contest.. didn't know
there was a contest.. but found out quick enough. Worked everyone
about first call.. wasn't contesting, just testing out a new rig..
the way I was going.. if I had the time.. could have done real
well I believe.. not too much DX.. worked a couple.. but NO
PROBLEM working all over the US, one Mexico and a bunch of
Canadian.

73

Jeff, AC4HF

From: "Behrens J\vrg" <bhs@fh100.ubszh.net.CH>
Date: Mon, 30 May 94 17:50:45 +0200
Subject: OHR-Spirit problem

This is a question to the OHR-kit experts of this list. I've finished
my OHR-Spirit recently (great kit! well - others dit comment on that
already) and it seems to work nicely (the sensitivity is great!) but
I'm wondering if it's usual that one has to turn on the volume to
about 80% level in order to get some reasonable output. The phones
I'm using are ok ;-) The band is 20m, the antenna is a multiband
40/20/15 which works fine with a R5000 HF receiver, and DC voltage
supply is fine, too. Any ideas?

Thanks for any comments,

73, Joerg (HB9 - TXing into a dummy load - still didn't have time for
the exam...)

From: lhalliday@creo.bc.ca
Date: Mon, 30 May 94 09:05:59 PST
Subject: R1 update

Thanks to everybody who wrote privately about this.

The machine is complete back to the volume control, which is

about 65% of the circuitry. I'm using a 10-by-15 cm PC board (4 by 6 inches, approximately), and it's far from crowded.

My first smoke test was when I had completed the output stage, back to the pot that sets the bias on the output transistors. I checked that the resistance across the power leads was somewhere between zero and infinity, observed a small variation when I twiddled the bias pot (a nice worm-drive one), and hooked the thing up to some headphones and a 9 volt battery to see what would happen. I like to use somewhat tired batteries for this, to keep the voltage down, and to limit their current capability. My 12 amp Astron supply could vapourise the whole thing in milliseconds if something went wrong...

The output stages came up with a soft thump, and when I cranked the input current up to 45 mA was able to brush my fingers across the inputs and hear appropriate noises in the headphones. Yahoo!

The next stage was the LM387 and the last filter, and this was a mixed success. The input current jumped sharply (60 mA) and instead of a soft thump I got a sharp click when I applied power. And couldn't hear any output. Since I may have indeed goofed (the signal levels and impedances may also be resistant to noise off one's fingers...) I'll set it aside for the moment and start work on the mixer, input diplexer, and so on. That's all that's left, anyway.

Further updates to follow.

73 from Burnaby,
laura VE7LDH/XL7LDH
             ^^^ special prefix to commemorate D-Day

From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Date: Mon, 30 May 94 11:02:08 HST
Subject: antennas over saltwater

Speaking of antennas over saltwater, if you've ever driven around the south-east portion of San Francisco Bay you've noticed a couple broadcast stations (non-qrp) with their antennas sitting in the shallow water of the bay. Excellent ground system. If one of those stations ever goes off the air I'd love to hook up a qrp 160M rig to the antenna and see what it could do.

Jeff NH6IL

End of QRP Digest V0 #112
****

From ab4el.com Tue May 31 09:02:15 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: Mail failure

We have a problem here. The "Mail failure" message is going to repeat every day, getting longer and longer as it includes each day's digest. Each digest includes the previous day's "Mail failure" message, so it will get worse and worse.

Is our QRP admin still on vacation? Who has the power to figure out what address is causing the bounces and delete it?

Headers from the most recent bounce are included below.

Stephen

Return-Path: qrp-bounce@Think.COM
Received: from mail.think.com (Mail.Think.COM [131.239.33.16]) by thor.INS.CWRU.Edu with SMTP (8.6.8.1+cwru/CWRU-2.1)
id HAA20056; Tue, 31 May 1994 07:46:59 -0400 (from qrp-bounce@Think.COM for <sct@po.cwru.edu>)
Received: by mail.think.com; Tue, 31 May 94 07:06:09 -0400
Received: from Think.COM by mail.think.com; Tue, 31 May 94 07:05:56 -0400
Received: from IC1D.HARRIS.COM (mvstcp.corp.harris.com) by Early-Bird.Think.COM; Tue, 31 May 94 07:05:46 EDT
Received: by IC1D.HARRIS.COM
(Soft-Switch Central V4L380P3); 31 May 1994 07:06:07 EST
Message-Id: <X400.POSTMAS8.0429.1994 0531 07060706>
Date: 31 May 1994 07:06:07 EST
From: "POSTMASTER" <HARRIS.POSTMAS8@IC1D.HARRIS.COM>
Subject: Mail failure
To: QRP@Think.COM
Comment: MEMO 05.31.94 07.06
Sender: qrp-bounce@Think.COM
Precedence: bulk

--
Stephen Trier   Whenever the literary German dives into a sentence, that is
sct@po.cwru.edu the last you are going to see of him until he emerges on the
KG8IH   other side of his Atlantic with his verb in his mouth.
              -- Mark Twain, "Connecticut Yankee in King Arthur's Court"

From ab4el.com Tue Jun 7 13:30:50 1994
From: lhalliday@creo.bc.ca
Subject: Measuring power output with a scope

Funny that Daniel should ask this - I did it last night.

The general idea is that you are using your scope as an RF
voltmeter, and then deriving power from Ohm's Law. The maths
first:

   power = voltage * current   (1)

by Ohm's Law,

   current = voltage / resistance   (2)

Substituting equation (2) into equation (1) gives:

   power = voltage^2 / resistance

The resistance is the resistance of whatever you use to terminate
the output and soak up the power. This may, for example, be the
50 ohm impedance of your dummy load. Use the scope to measure the
voltage developed across the dummy load, and you're all set. Make
sure the scope probe impedance is high enough not to load the
circuit too much.

For low power levels a 51 ohm resistor may suffice; it's hard to
find anything other than carbon film resistors these days, which
have a spiral of carbon material inside them, and thus some
inductance. It's negligible at HF if the resistors are any good.
Carbon film resistors are the ones with the bulges at the ends,
by the way.

Example: I measure 1 volt peak-to-peak across a 50 ohm resistor.
This corresponds to .707 volts RMS. Power output is then:

.707 * .707 / 50 = .01 Watts = 10 mW, or 10 dBm

Oh, by the way: my ugly R1 passed its initial smoke tests last night, and even though hooked up to a dead 9 volt battery (sagging to about 7 volts under load) picked up some RTTY below 80m. I'll hook it up to some real power tonight - being *very* careful about arranging the leads to avoid BBBRRRAAAPPPPP feedback - and see what happens. My Heath HG-10 VFO produces about 7 dBm (hence the scope...), which is exactly what I need...

73 from Burnaby,
laura VE7LDH/XL7LDH/CI7LDH

From ab4el.com Wed Jun 8 21:12:44 1994
From: BHOWLE@delphi.com
Subject: MFJ - 9020 LIVES !!

Thanks to all who responded to my plea for help for my dead MFJ-9020 -

Ref: MFJ-9020 Go Poooof !

After repairing the trace on the circuit board I still had a shortso I replaced the LM-317 voltage requlator and the 1N4001 diode that was soldered to the bottom of the board. As long as I had everything apart I replaced the old RIT pot with one with a center detent - so now I know where zero is-

Anyway, when I applied power very thing seemed to work fine - receiver just as good as ever and power output is around three watts. Ran into a little problem when I reinstalled the keyer - when I plugged the key in it started sending dits - I checked my key for a closed contact and found none (after hooking the power up wrong you start to look for the little things first!) and then plugged in a new jack and still got a string of dits. I'm afraid maybe I've done some damage to the Curtis chip on the keyer board. A call to MFJ's tech support line and I found that they'll sell me a new chip for the keyer for $ 21.00 - or - I can send them the keyer and they'll fix it for me for ten (10.00) bucks no matter what the problem is. Well, for a deal like that the keyer board will be on the first bus to Starkville in the morning.

Again TNX to all who responded with suggestions. Tomorrow I'm going to Radio Shack and buy a surface mount fuse holder and place a 2 amp fuse just behind L9 where the recently vaporized PCB trace was.

Hope you all can cpy me on a straight key until the keyer comes back. BTW, Ted at MFJ said things there are in a uproar right now as MFJ is moving across town to a larger facility.

.0073 - Bob - WA4ZID

From ab4el.com Tue Jun 7 20:38:49 1994
From: BHOWLE@delphi.com
Subject: MFJ-9020 GO PoooF * !

I wonder if anyone here on the QRP list has any experience with a MFJ - 9020 rig that was hooked to the battery with the poliarty reversed?

I just did this and when I popped the cover I found a trace on the circuit board (near L9) had been burned in two.

Whadda you guys think - install a big diode in series with the + lead on the power jack and then bridge around the pcb board trace? Would like to hear from anyone else who made this mistake - real names not neccessary - and found any component damage.

I've got to get this think cookn' - I leave for the wilds of southeastern Wisconson on a two week camping trip in about a week and a half.

All help and suggestions will be apprecieated.

TNX,

Bob - WA4ZID/QRT

From ab4el.com Wed Jun 8 00:56:56 1994
From: stark <mswmod@sage.unr.edu>
Subject: Re: MFJ-9020 GO PoooF * !

On Tue, 7 Jun 1994 BHOWLE@delphi.com wrote:

> I wonder if anyone here on the QRP list has any experience with a MFJ - 9020 rig that was hooked to the battery with the poliarty reversed?
>
> I just did this and when I popped the cover I found a trace on the circuit board (near L9) had been burned in two.
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> Wisconson on a two week camping trip in about a week and a half.
>
> All help and suggestions will be apprecieated.
>
>
>   TNX,
>
>   Bob - WA4ZID/QRT

Hi Bob,

I would put a fuse (a 1 or 2 amp) in the B+ lead, then
a good diode to ground. That way you will just blow the
fuse and now have a .6v drop in operating voltage.

Haven't burnt up an MFJ but have tried things like that
on lots of other rigs!

Harris mobile radios used to have a very high value resistor
wrapped with fuse wire in the B+ lead. First time I blew one
of those it took over an hour to find the trouble. Sure would
have been nice to have had the book!

Heavy equipment made by Cat use 24vdc for starting and 12vdc
for running. If you'r not real careful you sure can make some
smoke with those. Plus most were also positive ground.

Have fun, Ron

.....KU7Y.....
.....Monte "Ron" Stark.....
.....Sun Valley, Nevada.....

From ab4el.com Sat May 28 11:25:08 1994
From: "MYRON R. KOYLE" <72530.1666@CompuServe.COM>
Subject: MILLIWATT RIG INFO NEEDED

I just got a letter from a long time ham (who bought my TT 505 years ago)
who wants a challenge. He wrote me that he and two others want to "build a
one transistor rig that is powered by a 9v battery". Kinda sounds like a
perf board job to me -- but maybe FAR has a board that these three could
buy (?)

Well, gang, there it is. Is there a design out there that is relatively
free of grief so we can get three more members in the QRP fraternity? A

good first expperience would help.

72/73,

Myron N8DHT

From ab4el.com Sun May 29 13:49:23 1994
From: James Speer <F_SPEERJR@CCSVAX.SFASU.EDU>
Subject: MILLIWATT RIG INFO NEEDED

You might suggest to your friend that there are a number of good books with suitable circuits around. E.g., Hayward & Demaw's _Solid State Design for the Radio Amateur_. Might also suggest dead bug construction for something that goes together quickly and works well. Might finally suggest TWO transistors -- why would you EVER choose to key the oscillator (chirp, chirp)...

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From ab4el.com Sat May 28 13:16:30 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: Re: MILLIWATT RIG INFO NEEDED

Myron: Yes, I've posted some one x-sistor xmtrs on the net - their archieved at the qrp ftp site.
You sold a TT 505 years ago? I didn't realize that TT's (teletypes?) were around 500 years ago!!

.73,
Jeff NH6IL

From ab4el.com Sat May 28 18:32:36 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: MILLIWATT RIG INFO NEEDED

Jeff's collection of transmitter projects is available in gopher and WWW from the CWRU gopher/WWW server. Here are the links:

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The "More Projects" menu is extensions to Jeff's projects, plus whatever
other projects I see online that I think are interesting and worth preserving.

Name=More Projects
Type=1
Path=1m/activities/w8edu/more.projects
Host=gopher.cwru.edu
Port=70

Both of these are off of the W8EDU menu:

Name=W8EDU, the Case Amateur Radio Club
Type=1
Path=1/activities/w8edu
Host=gopher.cwru.edu
Port=70

If you are a WWW user (that includes Mosaic), use these URLS:

QRP Projects    http://www.cwru.edu:70/1m/activities/w8edu/herman.projects
More Projects   http://www.cwru.edu:70/1m/activities/w8edu/more.projects
W8EDU Page      http://www.cwru.edu:70/1/activities/w8edu

Enjoy!  I wouldn't mind collecting more projects on this site, if you have
suggestions.

          Stephen


--
Stephen Trier    Whenever the literary German dives into a sentence, that is
sct@po.cwru.edu  the last you are going to see of him until he emerges on the
KG8IH            other side of his Atlantic with his verb in his mouth.
              -- Mark Twain, "Connecticut Yankee in King Arthur's Court"


From ab4el.com Thu Jun 9 01:38:35 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: More ARK4 comments

Some more comments on the new ARK4 from S&S Engineering--

Severn, MD, 8 June 1994--Someone recently asked about performance of
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the new ARK4 from S&S Engineering. I sent him some brief comments but The System didn't like the address I used (even though it was identical to the one on his message--that happens sometimes) so instead of remailing it I decided to flesh it out a bit and "go public."

I got a loaner from Dick, KA3ZOW, a couple weeks ago at a local hamfest, for review. I played with it a bit, mostly off the air, then loaned it to a friend whose antenna is in the air (unlike mine, which is mostly on the ground at the moment). I didn't do any sensitivity or stability tests yet (the latter seems a bit pointless in a synthesized rig, which is based on the stability of crystal oscillators). I did notice some things I didn't like in the RX audio chain, but this is an early iteration of the design and Dick will, I hope, fix them when brought to his attention.

First, in all fairness, I should point out that the ARK4 I have now is a prototype, and the ARK40 last year was either a prototype or very, very early production model. (I received both already assembled.) In both the loaner ARK40 this ARK4 there is a constant whine or tone in the audio chain, even with volume control all the way down. Dick told me the ARK40 problem was the LM386 oscillating a bit. In the ARK4, which will NOT drive a speaker and is not intended to, there is a much higher tone, about 10Khz (confirmed with an audio oscillator), with volume at min. That shows it's in the audio chain, not the main rig. The ARK40 tone was about 2K, as I recall.

Both were low level, probably not easily noticed with volume cranked up to usable levels, but the point is they should NOT be there in the first place. Second ARK4 audio bug is the constant low level sidetone freq heard at all times, even with vol at min. He runs the sidetone osc constantly and gates the output on and off. It's probably not easily noticed with vol at working levels. It's gated on and off by shorting the oscillator output to ground with a 47 uF capacitor and transistor (2N3904?). At first I thought the collector/emitter voltage drop of the conducting transistor was keeping the cap from shorting the signal completely, but later disproved that. I also thought that the problems might be caused by the inches-long PCB trace from the volume control to the audio amp picking up stray signals along the way; I disproved that one, too.

The audio IS distorted as someone recently said of an ARK4 he saw at Dayton. It finally clears up fairly well at about 12 o'clock on the vol, but at lower levels it is distinctly distorted and harsh and annoying. By the way, this one had the optional audio filter. Here's the audio chain--sidetone and product detector feed a single op amp section which goes to the phone jack. If the filter is installed, that op amp section instead goes into another op amp,

where it is attenuated, filtered and passed on to the jack. I disabled and removed that filter IC, jumped the signal straight over to the output line, running the audio chain in its "stock", nonfiltered mode; all problems were still there so can't blame the filter. (Part of that IC in the filter is used for the audio whether the filter is turned on or not; switching the filter in or out is accomplished with +12V, not by use of a DPDT switch as in some rigs.)

Transmitter output signal on good quality HP spectrum analyzer--all spurs and harmonics down WELL over the required 30 dB. Interestingly it has a spur on the TX signal at the IF freq of 3579, not too surprising, I suppose, and perhaps to be expected...and it IS about 40 dB down. There is a second spur just below that, at 34-something, and that second spur moves when you change freq, moving 100 KHz if you change the rig by 100 KHz (a one to one change). That, too, is waaaaay down. (I didn't check the ARK40 on the analyzer when I had it, but would assume harmonics are down similarly.)

One final experiment, which I've always wanted to do on something, anything, was to look at the output signal on a sweep from 0.1 to 36 MHz, seeing up through the 5th harmonic, both with and without the pi net filter in place. I'd always heard that harmonics were pretty strong in a class C amp, and here was the perfect chance to do it. "Dramatic" is the best way to compare the two different sweeps. I took pictures of both with a scope camera, and will have them in the Idea Exchange in the QRP Quarterly in the future. (This is certainly not an indictment of the ARK4, of course, but a simple fact of electronics, and will happen with ANY class C amp--and that's why everything we build has a filter on it!)

73 de WA8MCQ@WB3V.MD packet and WA8MCQ%hambbs@wb3ffv.ampr.org (which works just as well as the longer Internet address with my name in it)
--
Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Thu Jun 9 12:17:27 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: More ARK4 comments

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Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Wed Jun 8 08:29:30 1994
From: bcieslak@mkelan5.remnet.ab.com (Brian Cieslak)
Subject: More NORCAL40

Well I just about replaced all the parts in the xmit osc/mixer with no success...all except the 150 pf caps.... Once again lots of RF going into the stage none out...output of 602 goes to 8 volts dc when keyed ...no output... also no detectable ac at xtal of this stage but replaced all components in this section too.

Help!!!

Brian AE9K

From ab4el.com Wed Jun 8 09:47:37 1994
Subject: Re: More NORCAL40
From: "John F. Woods" <jfw@ksr.com>

> Well I just about replaced all the parts in the xmit osc/mixer with no
> success...all except the 150 pf caps.... Once again lots of RF going into
> the stage none out...output of 602 goes to 8 volts dc when keyed ...no
> output... also no detectable ac at xtal of this stage but replaced all
> components in this section too.

Hmm. Pull out all the components and check for shorts and opens in the circuit board. There shouldn't actually *be* "lots" of RF going into the 602, it's 1dB compression point is 67mV (I wonder if it's being fried?); if you really have several volts of drive, try dropping it to something reasonable with resistors. Build a transistor oscillator around the crystal to make sure it's good. You might also try to breadboard an oscillator with the 602 you're using (on another circuit board) just to make sure it's OK.
Also, note that if you've got a scope probe attached to any of the crystal oscillator tank components, you'll probably stop the oscillator.
Another personal gripe: the NE602 shouldn't really be operated with 8V (I wish they still made 78L07 regulators!!!); I think it isn't supposed to go POOF until you feed it 9V, but apparently they're much less noisy and more reliable below 8V. If it's easy, try changing the operating voltage to 6V.

From ab4el.com Mon Jun 6 13:09:34 1994
From: msdooley@rockdal.aud.alcatel.com (Michael S. Dooley)
Subject: more VFO troubles

> Go have a beer and relax. Then spend the rest of the weekend on the
> buffer stage.

I can't spend all of the rest of the weekend on it. My girlfriend thinks we're going hiking tomorrow. :-)

---
merciful heavans!!! a GIRLfriend!!! (was that in the kit?) ;-) ;-)

mike dooley KE4PC

From ab4el.com Sat Jun 4 11:59:50 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)

I put the 0.001uF back as the link output cap and removed the 0.01 LPfilter cap, and it didn't help much. It gave me nice, big 2+ V waveforms, all on the wrong frequency. :-)

I'll think about adding a buffer. I'm trying to figure out where to fit it. I didn't leave much room around the VFO -- it was the first part I built and I wasn't sure how much space the mixer and filter was going to take. I'm about ready to put this thing aside and try a design that is more polished.

Stephen

From ab4el.com Sat Jun 4 16:24:49 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)

Stephen says: ``I'm about ready to put this thing aside and try a design that is more polished.''

I hope not, for we are all vicariously building this VFO with you; the frustration you feel we are all feeling. If you quit none of us will get a good night's sleep. A tremendous responsibility is upon you to finish this project!

Go have a beer and relax. Then spend the rest of the weekend on the buffer stage.

Jeff NH6IL

From ab4el.com Sat Jun 4 17:01:56 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)

> Go have a beer and relax. Then spend the rest of the weekend on the
> buffer stage.

I can't spend all of the rest of the weekend on it. My girlfriend thinks we're going hiking tomorrow. :-)

Thanks for the encouraging words. There is some more checkout of the VFO I want to try, then I'll try building a buffer for it. Any opinions on

whether JFET or bipolar is the way to go for the buffer?

Stephen

From ab4el.com Mon Jun 6 10:19:08 1994
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)
From: "John F. Woods" <jfw@ksr.com>

Quoth Jeff:
> Stephen says: ``I'm about ready to put this thing aside and try a design
> that is more polished.''
> I hope not, for we are all vicariously building this VFO with you; the
> frustration you feel we are all feeling. If you quit none of us will
> get a good night's sleep. A tremendous responsibility is upon you to
> finish this project!

While I think there's still more mileage to be wrung from this circuit, it's not necessarily a bad idea to get halfway through an exploratory project like this and decide it's time for the next one. I managed to learn a good deal about VFO stability by building a succession of 30-meter VFOs, each more stable than the last, for a 30m transmitter that I never did get around to finishing. I might have been able to get a good VFO in two steps, if I'd kept fiddling around with the original boards (well, the second one; the first try was pretty much irremediable), but I think I got more out of it by being willing to step back and start over once I'd milked a particular topology for all it seemed to be worth.

As I said, a buffer amplifier will probably help this VFO a lot; another advantage of a buffer amplifier is that it makes getting the VFO on frequency (because it gives you an isolated point to probe with the frequency counter).

73, John, WB7EEL

From ab4el.com Mon Jun 6 10:26:44 1994
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)
From: "John F. Woods" <jfw@ksr.com>

> > Go have a beer and relax. Then spend the rest of the weekend on the
> > buffer stage.
> I can't spend all of the rest of the weekend on it. My girlfriend thinks
> we're going hiking tomorrow. :-)

So bring a butane-fired soldering iron! :-)

> Thanks for the encouraging words. There is some more checkout of the VFO
> I want to try, then I'll try building a buffer for it. Any opinions on

> whether JFET or bipolar is the way to go for the buffer?

JFET. They're easy, they're cheap, they have high impedance inputs. What more could one want in a buffer amplifier? :-)

73, John, WB7EEL

From ab4el.com Mon Jun 6 15:20:03 1994
From: dh@deneb.csustan.edu (Doug Hendricks)
Subject: Re: More VFO troubles (W1FB Design NB p. 111 again)

From ab4el.com Fri Jun 3 23:18:01 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: More VFO troubles (W1FB NB p. 111 again)

I'm still working on the rig, and I've made progress. Many thanks for the help!

I'm still having troubles with the VFO. For some reason, the output link and capacitor are behaving as the frequency-determining components. If I detach the link from the output capacitor, the VFO works exactly as one would hope, on frequency and everything. If I leave the link connected by play with the proper frequency-determining components, the frequency changes little if at all. The dead giveaway was when I replaced one of the tank capacitors with a trimmer and changes of 10x in the tank capacitance produced no change in the VFO output frequency!

I have managed to convince myself that the link and capacitor forms a tank that has a higher Q than the intended oscillator tank circuit. I noticed that other Hartley VFOs use a capacitor from the JFET source to get the signal, not a link, so I tried that. That works OK, but now I can't get the designed 2V pk-pk signal into the mixer.

<sigh> Next time I build a kit. :-)

Any suggestions? Are there any likely faults that would cause the link do the frequency determination? Have you any ideas on how to keep the 2V pk-pk output while putting the frequency determination back where it belongs, in the oscillator tank?

Stephen

From ab4el.com Sat Jun 4 03:47:31 1994
Subject: Re: More VFO troubles (W1FB NB p. 111 again)
From: mjsilva@ted.win.net (Michael Silva)

>
>I'm still working on the rig, and I've made progress. Many thanks for the
>help!
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>I'm still having troubles with the VFO. For some reason, the output link
>and capacitor are behaving as the frequency-determining components. If I
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>little if at all. The dead giveaway was when I replaced one of the tank
>capacitors with a trimmer and changes of 10x in the tank capacitance produced
>no change in the VFO output frequency!

I don't remember if it was in a private or group e-mail that you
mentioned putting a 0.01 in place of the 0.001 as the link output
cap. That translates to about 2 ohms instead of 23 ohms, in series with
the 0.01 / diode combination. which is one heck of a heavy load on a VFO.
Ignoring the diodes, the difference is a load of 4.5 ohms vs. 25 ohms,
which reflects back to the tank as 120 ohms vs. 720 ohms. The tank
impedances are about 200 ohms, so you get a tank Q of either 0.6 or 3.5
(disregarding other loading by VFO circuit and diodes). No wonder your
VFO is gasping! I would first try putting the 0.001 back in the
circuit (and maybe take out that other bothersome 0.01 in the LP
filter), and if that doesn't work, try a simple class-A buffer to give
your poor VFO tank a break.

><sigh> Next time I build a kit. :-)

Don't you dare! We're having too much fun "helping" (?!). Now I'll
post this and let everyone check my math....

Mike, KK6GM

From ab4el.com Sat Jun 4 11:55:40 1994
From: btoback@netcom.com (Bruce Toback)
Subject: Re: More VFO troubles (W1FB NB p. 111 again)

Mike, KK6GM, quotes:
>
> >
> >I'm still working on the rig, and I've made progress. Many thanks for the
> >help!

> >
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> >and capacitor are behaving as the frequency-determining components. If I
> >detach the link from the output capacitor, the VFO works exactly as one
> >would hope, on frequency and everything...

then writes:

> I don't remember if it was in a private or group e-mail that you
> mentioned putting a 0.01 in place of the 0.001 as the link output
> cap. That translates to about 2 ohms instead of 23 ohms, in series with
> the 0.01 / diode combination. which is one heck of a heavy load on a VFO.
> Ignoring the diodes, the difference is a load of 4.5 ohms vs. 25 ohms,
> which reflects back to the tank as 120 ohms vs. 720 ohms...

> ><sigh> Next time I build a kit. :-)

> Don't you dare! We're having too much fun "helping" (?!).

Right... don't you dare! The rest of us are learning too much from your
efforts!

I haven't been collecting all the email from this thread, but if someone
else has, it would be nice to have it all put together and left on an
FTP server somewhere (once it's concluded, of course). It makes an
excellent tutorial. Thanks to builder and helpers!

-- Bruce
KN6MN

From ab4el.com Mon Jun 6 10:12:21 1994
Subject: Re: More VFO troubles (W1FB NB p. 111 again)
From: "John F. Woods" <jfw@ksr.com>

> Any suggestions? Are there any likely faults that would cause the link do
> the frequency determination? Have you any ideas on how to keep the 2V pk-pk
> output while putting the frequency determination back where it belongs, in
> the oscillator tank?

I think the best solution is to use capacitive coupling and a buffer amplifier.
It's more components, but it has the benefit of isolating the VFO from the
mixer, always a worthwhile thing. If you have a PC board without space for an
amplifier, you can add a simple JFET buffer on a daughterboard that's about
half an inch square and just let it fly above the circuitboard (this was used
in an old version of the Radiokit 20M QRP transceiver (and may still be used,
for all I know)).

From ab4el.com Thu Jun 9 15:25:19 1994
From: burdick@interval.com (Wayne Burdick)
Subject: MRF237, etc.

Mike,

Thanks for posting this info on the MRF237. Note that the NorCal 40 manual also covers this in detail, since we recommend the '237 as a substitute for the 2SC799, which is cheaper but now hard to find. (By the way, what other devices besides the 2SC799 and 2N3553 have you used that have the standard TO39 pinout and have good gain up to 10 meters? I'm always on the lookout for sturdy but low-cost devices.)

Thanks also for the PI-NET discussion. I know that many folks have upped their NorCal 40 power output by tweaking the filter, but I set it up at 2 watts stock for a couple of reasons: (1) as you mentioned, harmonic rejection can suffer; (2) at 2 watts, it's pretty hard to damage any of the P.A. transistors we typically use in these circuits, especially with the zener across the collector; (3) at 2 watts, batter drain is much lower than at 4 or 5 watts, and those extra few dB are less important for the back-packer than the extra milliwatt-hours saved. The NorCal 40 was, after all, intended to be an efficient radio above all.

A better way to up the power is to replace the RF choke with a 2:1 or 4:1 broadband transformer, which KN6VO has done. This keeps the PI-NET at 50 ohms in and out while supplying the proper load to the collector. If you want more drive, you can replace the MPF102 buffer with a 2N4416, or better yet a U310 or J310. The '310 has 4 times the transconductance of the MPF102.

73,
Wayne

From ab4el.com Thu Jun 9 01:37:40 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: MRF237; pi filters

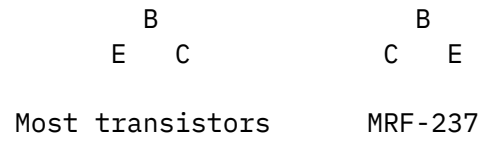
TRIVIA: MRF-237 PINS; CHANGES IN PI NET FILTER VALUES

MRF-237 PINS

On pages 42 thru 45 of the June 94 issue of QRPp, KN6VO writes about

"Increasing the Output Power of the NorCal 40" and he recommended using the MRF-237 transistor. This is a good little transistor for general QRP work, and the HW-9 uses two of them in the output. However, it does have one little quirk that wasn't mentioned in the article--it has a "backward" pin-out.

The vast majority of transistors in that case style (TO-39 and similar) have the familiar emitter-base-collector lead configuration, going clockwise around the triangle. However, the MRF-237 reverses this--it's collector-base-emitter, going in the same direction. Note that the last lead, which is emitter in this case, is connected to the case; as Ron pointed out in his article, this greatly simplifies heat sinking when the circuit allows the emitter to be grounded, since the case is not hot with RF or DC voltage.



Most transistors MRF-237

If you wish to verify this nonstandard pin-out, you can consult page 2-506, data sheet for the MRF-237, in the Motorola RF Device Data book volume 1, part DL110, rev. 4, or the illustration manual that comes with the HW-9 manual; figure 2-4 shows them highlighted (Q405 and Q406); note that the drawing is a top-side view and thus shows the pins reversed from what you'd see if looking at the transistors from the bottom. It shows Q405 and Q406 with an E-B-C pattern viewed from the top, which is C-B-E from the bottom; compare this with nearby Q404, also highlighted, which is the familiar 2N3866 with "normal" pin-out of C-B-E from the top, or E-B-C from the bottom.

By the way, AA4ZS brought an HW-9 to one of our local QRP Show and Tells at the ham store a few years back, and claimed it put out a full ten watts on 80 meters and wanted to know if it was real and clean. I took it into the service shop and put it on the Bird wattmeter, 100 MHz scope (Tektronix 465B), dummy load with diode detector, and $10,000 IFR service monitor, and everything agreed--it was putting out a full, honest, real, clean 10 watts on 80 meters; good, pure sine wave on the scope, harmonics on the IFR analyzer all well over 30 dB down. (I would not normally believe someone who told me they were getting that much power out of an HW-9.)

CHANGES IN PI NET FILTER VALUES

In the article Ron also mentioned varying some of the values in the NorCal 40 pi net filter to get greater power. You have to be careful

when doing that--you could be substantially reducing the harmonic attenuation in the bargain. I've been having a lot of fun with a computer program at work called Touchstone, which does a lot of neat simulations of RF networks (at a price similar to some new cars), and doing some simulations of various networks, changing values to see the effects on insertion loss (and thus power output) and frequency response. The bottom line is that you can almost always redesign or modify any filter network for greater power output, but that usually comes at a cost of reduced harmonic attenuation and you have to carefully balance the two.

The FCC requires at least 30 dB of attenuation of spurious signals, which includes harmonics, if running 5 watts or less, and 40 dB if over 5 watts. It's always safest to use a filter with at least 30 dB attenuation of harmonics and then you're guaranteed to be safe. A power amp running a single transistor in class C operation can put out some really hefty harmonics (and I'll have the results of some experiments along those lines in an upcoming issue of the QRP Quarterly, including spectrum analyzer photos). If you follow it with a filter with harmonic attenuation of, say, 20 dB you could be getting dangerously close to the limits.

Thirty dB down from 5 watts is 5 milliwatts, and when the sunspots were really hot a few years ago I worked into the West Coast and Europe quite a few times on various bands with 35 milliwatts and less (using only a loop antenna). And for a number of years I've been checking into the Saturday morning QRP net on 7040 KHz with WA1JXR, at 350 miles away, running between 1 and 10 milliwatts. If other hams can hear really QRP signals, so can the FCC!

I did some Touchstone simulations of some of the Chebyshev filters from the ARRL handbook, and they give some really good attenuations, especially the 7 element ones. Coming close to the required component values is important, of course, and it helps to have some sort of LC meter to verify capacitor values and trim up coils to the required inductance. (And here's yet another promo for the good old Boonton 260A Q meter, which is invaluable for that...but don't use words like "invaluable" when negotiating with the seller!)

WA8MCQ@WB3V.MD packet
WA8MCQ%hambbs@wb3ffv.ampr.org Internet
8 June 1994

--
Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Sun Jun 5 14:54:18 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: My NN1G RIT circuit?

Hi Gang,

Err... has anyone seen my NN1G RIT circuit which I thought I posted on the list? If anyone received it, could he (or she) please forward back a copy to me. Tks.

73,
Daniel
--
+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+--------------------------------------+

From ab4el.com Sun Jun 5 03:24:40 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: My political statement

What the heck, if K5FO can make one, I'll make my own and see how much trouble I can get in. My political statement: I'm a novice on Internet and the Internet QRP mailing list (having been going for about 2 weeks now). The QRP list and the rec.radio.amateur.whatever areas are what the ham packet radio BBS system SHOULD be! [End of political statement; "flame receptor" turned on and awaiting inputs.]
--
Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
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From ab4el.com Mon Jun 6 02:40:18 1994
From: km6wt@sns.com (Mont H. Pierce)
Subject: NE 30-40 kit deliver time

I ordered a NE 30-40 kit at the end of April, right after reading Doug's review, and I haven't received it yet. Since several of you have posted here about getting/building/using your kits already, I've been growing concerned that maybe my order has been misplaced.

How long did it take for you to receiver your orders?

Am I just being a little anxious or do you think I've waited way to

long and all the kits have been sold out? (hope not>.

Thanks in advance for your input.

73,
km6wt, Mont Pierce

From ab4el.com Fri Jun 3 07:22:26 1994
From: ah301@yfn.ysu.edu (Jerry Sy)
Subject: need antenna tuner recommendations

hello!
I am new in qrp and would like to get recommendations for
an antenna tuner. is the $89 MFJ tuner (advertised together
with their qrp rigs) ok ? do antenna tuners require power
supply ? I am going to the BreezeShooters hamfest this sunday
and hope to pick one up.

I got an ohr spirit 40 and a homemade iambic key. I'll be
in nyc all week next week, anybody in the area want to help me
with my cw qso ?

thanks in advance

73s de jerry N3RKD

--

From ab4el.com Sun Jun 5 18:34:31 1994
From: ah301@yfn.ysu.edu (Jerry Sy)
Subject: need MFJ-941D tuner manual

I got a used MFJ-941D versa tuner II and do not have the manual for
it. I'd appreciate it if someone who has it can send me a copy of it
(is it a one page instruction sheet ?). or maybe just explain to me
via email how to use the tuner.

thanks in advance.

73s de jerry N3RKD
almost ready for QRP, if I can figure out how to use the tuner.

--

From ab4el.com Tue Jun 7 12:08:26 1994
From: mvjf@mvubr.att.com (James M Fitton +1 508 960 2577)
Subject: NEW FD BATTERY

Exciting new products:

Last night at Radio Shack I found a miniature 12 Volt battery and
a battery holder to mount inside my miniature, portable, HB, keyer.

The battery is about 1 inch long and is called a Lighter Enercell
Cat. # 23-144, $1.99

The battery holder is perfect for holding the battery:
Cat. # 270-405, $0.79

These are perfect for the job !!! And cheap too !!!

72   W1FMR
.~c j.fitton

From ab4el.com Fri Jun 10 03:09:33 1994
From: Bruce Walker <bruce@Think.COM>
Subject: new majordomo system

I just upgraded our majordomo mailing list maintenance robot from a very
old version to the latest, greatest. This is hopefully a final test of its
functionality. If you have problems with sending mail to the list, please
let me know. --bruce WT1M

From ab4el.com Mon Jun 6 22:02:54 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: NN1G

Gang,

got email today from NN1G!! wow! the internet
is going crazy with all these famous people.

looks like Wayne Burdick and Doug Hendricks both
will be at the meeting at Two Guys from Italy
in Mt. View. this could be a good gathering of

many friends and lots of stories to tell after
this one.

i won't be on the air this week. in a different
hotel and no windows to open. also, the world
soccer thing is closed down both SF and Boston
it looks like on hotel space.

dit dit de k5fo/6

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Fri Jun 3 12:21:43 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: NN1G 40-40

Gang,

Some minor things on the NN1G 40-40 NE QRP Kit.

1. I put a small ferrite bead in the base leg of all
    final PA transistors. This is to keep the parasitics
    down. It may be that this is an unnecessary procedure,
    but I just do it that way. Doesn't seem to effect the
    performance in any other way and it may just help on
    the higher harmonics too.

2. Put a 33V Zener from Collector to Ground (Emitter).
    This protects the PA transistor if you forget the
    antenna (we've all been there and done that) and
    the output sees a serious mismatch. The voltage
    peaks across the transistor in such cases will
    far exceed the allowed limits and cause instantaneous
    filure and death to the little critter.

I have just got to say that I throughly enjoyed putting
this kit together. At 2.8" x 4.0" in size, this puppy
is a neat size. Good quality components too. No missing
parts. Dave does good work. See other postings or archives
for all ordering information. Joe Bob says check it out.
(That's a movie critic in this part of Texas for B movies.)

dit dit

another satisfied customer.

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Mon May 30 05:19:25 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G audio output question.

Hi Gang,

This is a question regarding the audio output of the NN1G RX board. Why does the output comes from the 10 ohm resistor instead of the usual pin 5 of the LM-386? Is there a reason for this? Or is it an error?

From what I understand, the 10 ohm resistor with the 22 uF cap forms the Zobel Network and the output really should NOT come from there. In fact most other circuits have their output coming from pin 5. Does anyone know the reason behind this?

I would like to drive a speaker so I was wondering if it would be possible for me to take the output from pin 5, nothing else barring.

Please comment. Tks.

73,
Daniel
--
+-------------+-------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
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+-------------+-------------------------------------+

From ab4el.com Thu Jun 2 16:00:26 1994
From: Mike Thomas <MTHOMAS@uga.cc.uga.edu>
Subject: NN1G for 40M

I don't think my first post was successful so I will try again. Could someone post or e-mail me the mods/parts needed to alter the NN1G plans stored at think.com from 20 meters to 40 meters. I have caught the building bug and would like to build the NN1G for 40. Maybe the 40 meter version could also be posted to think.com for everyone's use.

Thanks. 72

Mike Thomas
KE4LAU

From ab4el.com Mon May 30 05:52:15 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G RIT

Hi Gang,

Just FYI, I managed to get my RIT for the NN1G working, gives me +-1 kHz on the VFO. Works beautifully. Uses:-

1	MV2106 or MV2104 or MV2105
1	2N3906 PNP transistor
1	IN914 or IN4148 small silicon signal diode
3	10k 1/4 watt carbon film resistor
2	100k 1/4 watt carbon film resistor
1	33k 1/4 watt carbon film resistor
1	10k linear variable resistor
1	10pF NPO ceramic disc capacitor
1	0.001uF ceramic/mylar capacitor
1	0.1uF capacitor (any monolithic type)

Lesee if there is enough interest to get me to post the mod (if there isn't one already). This mod can be done without soldering to the board. Needs soldering to the air variable though.

Now, I am gonna add an audio filter to this thing to see what happens. Next will be a little modified TX PA section.

73,
Daniel
--

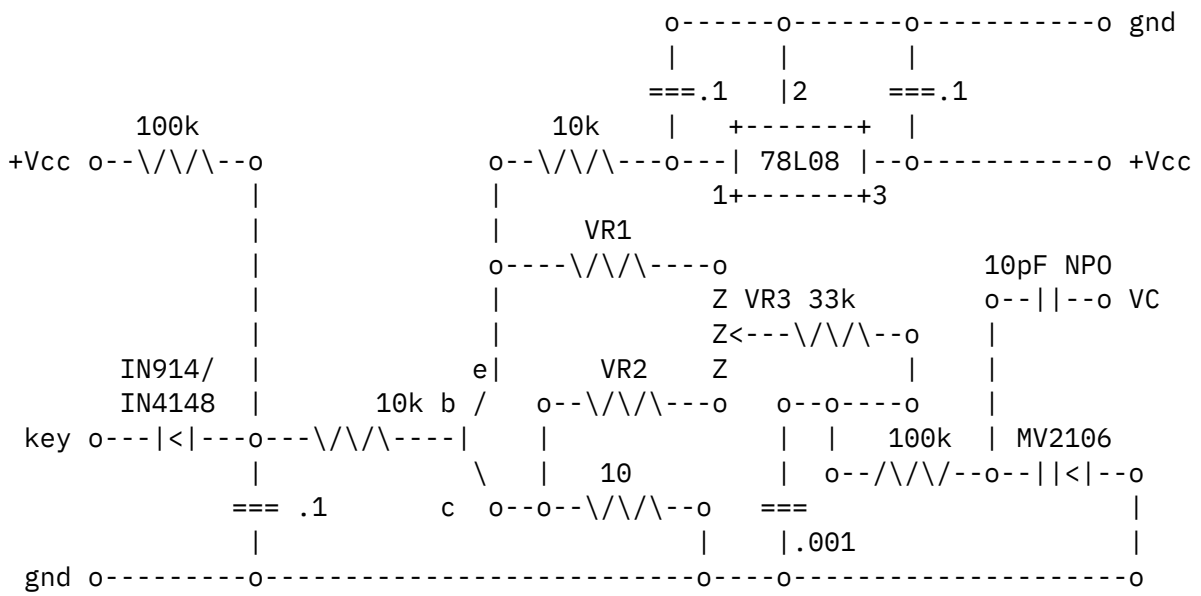
Daniel Wee	daniel%pandora@csah.com	** Man needs more
UUCP1.12b	daniel.wee@f516.n600.z6.fidonet.org	than a new start, he
SNEWS 1.91	csah.com!pandora!daniel	needs a new heart! **

From ab4el.com Tue May 31 16:20:05 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G RIT

Hi,

There was a few request for the RIT circuit for the NN1G so I

thought I'd post it here. Sorry for the poor ascii circuit diagram :)



All capacitor values are in uF unless otherwise stated. All are ceramic discs but decoupling capacitor types are not critical. Resistors are all 1/4 watt 5% carbon film.

VR1 and VR2	presets valued between 10k to 50k, optional.
VR3	linear 10k variable resistor, with center indent??
MV2106 or MV2105	Varicap diode, MV2104 should also work.
78L08 or 78L09	Voltage regulator
VC	Air Variable tuning capacitor in NN1G, Not the grounded end but the "live" end.

There you have it. Lemme know how it works out. The following are some comments and instructions.

1. Keep all leads short if possible. Leads around the MV2106 and the 10 pF NPO capacitor should be especially short. Leads leading to VR3 may be longer if necessary, this is not as critical. If possible, try mounting the 100k, the MV2106, and the 10pF components as an "ugly" style assembly direct on the Variable capacitor.

2. VR1 and VR2 may not be necessary. Their values, when used, should be set to the minimum possible value that works. Usually only one or the other is needed, never both. The purpose of this is to set the center of the RIT. You should ground the key and measure the voltage at the wiper of VR3 and note it down. Now, set the RIT at the center position and vary VR1 or VR2 so that the wiper voltage is the same as that when the key is grounded.

3. Connect the wiper up in the direction you wish your RIT to behave, ie. the top and low end of the VR3, may be reversed if you wish.

4. After this, you may need to readjust L1 (VFO) for the new range. The other coils need not be readjusted.

That's it. RIT for the NN1G. Lemme know how it works out for any of you who tries this.

73,
Daniel

p.s. I am still looking for ways to stabilize the TX section of the NN1G. The circuit and the layout results in a very unstable system. Has anyone found a fix for this. Pse don't tell me I got to do this myself again!!!

pps. I added an audio filter to my NN1G to accompany the RIT circuitry. Works beautifully now. :)

--

| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
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From ab4el.com Wed Jun 1 04:48:29 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G RIT

Hi Gang,

The RIT I posted was designed with the Mark II in mind but the way it was designed means that it can probably work with any VFO circuitry which uses a 15-25 pF air variable as the main tuning capacitor. No big deal to it and it seems to work very well for me. Gives me +- about 1 kHz which is the way it should work :)

73,
Daniel

--

| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **

From ab4el.com Mon Jun 6 08:54:37 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G RIT Circuit found

Hi Gang,

This is to pre-empt a flood of my returning NN1G RIT circuits in my mail, HI HI! Someone on the net has kindly sent me back a copy. I thought it didn't get out on the list, looks like it did. Well have fun. I still welcome any advice on stabilizing the finals .... still looks bad in spite of everything.

Well, I managed to het my OHR Classic Dual Bander under way and it seems to be putting out a lot of power. My trouble came from one of the toroids where the insulation had not been sufficiently removed. Tricky one that. And also a defective final transistor. Got it all replaced and this rig can put out 11.2 watts on 20M and close to 20 watts on 40M. Is something wrong with me of just the rig??? It is supposed to put out 4-5 watts! Anyway it sounds very clean. Only problem is that the power setting needs to be readjusted everytime I change bands as the setting is different and so is the power output and I sure don't want to fry that transistor, cheap though it is ... some 90 cents each.

Great kit on the whole but here are some comments:-

1. I like the way the sidetone volume is independent of the audio volume control. Sure doesn't blast my ears into the next universe on weak signals.

2. Very high parts count but every little piece was there :) I hate looking for missing parts.

3. No problem with the excessive power output, it can be controlled though it would be nice if it was kept more or less the same for either bands for the same drive setting, using some feedback network I should think.

4. The case could have been much more compact but I could use the extra space for an additional amplifier. The on-board amp doesn't drive a speaker too well.

5. They should have provided a way to switch out the audio filter. I will be adding one myself but it should have been thought of.

6. The tuning is not very linear making the dial quite useless. I am going to try to put in one of those A & A Engineering frequency counters and rework the case.

7. Its nice to have a separate socket for manual and automatic keys.

8. Instructions could have included a little more trouble-shooting info such as expected signal levels at various test points etc. etc.

On the whole a great kit but a few marks short of an A+. The S & S Engineering ARK20 fares a teeny weeny bit better than this except for their pricing and single band limitation. I guess I am spoilt for the synthesized tuning on the ARK :)

73,
Daniel
--

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+-------------+--------------------------------------+

From ab4el.com Wed Jun 8 13:56:16 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: NN1G TX Stability

Hi Gang,

Ok, now that I've got the OHR Classic working, I am back to my previous task of fixing and super-charging the NN1G Mark II. I've just added a TA7205 audio amplifier to the output with a small internal speaker into my very compact (HWD is 2"x4"x6") case with RIT working fine. Now I have the unenviable task of trying to stabilize the TX section. The TA7205 circuit comes from pg. 4-38 of the 1994 ARRL Handbook and the IC costs about US$1.30 each here, which is quite cheap considering what it does.

Can anyone help me please. My TX side is really awful and unstable. Tends to break into oscillation. Also produces a nasty "click" while keying. I suspect the click is an initial burst or parasitics before the oscillator settles down.... any ideas welcome. There are so many NN1G kits out there, someone must know, so help me God!!!

Other than that this is getting to be a really nifty little rig. Compact and easily carried around. Now I don't need to bring headphones along with the ample output from the amplifier built on a 1" x 1.5" board mounted inside the case.

The other gripe I have is the poor mechanical stability of the vernier/air variable combination. The way the shaft is coupled requires a fairly rigid case but mine isn't quite so. I may change to another type with internal reduction drive. That should stabilize things some what, and give

me more space inside the case on the side. Oh well.. my desk is clear and now with the OHR Classic done, I can catch some shut-eye.

BTW, IMHO, my ARK 20 is a better performer than the Classic, but of course, it cost me THAT much more!

Upcoming projects ...

1. To kit up some NN1G's for our local club, SARTS.
2. Add the A & A Engineering frequency counter to the Classic.
3. Recalibrate my watt-meter.
4. Fix the NN1G TX stability problem.
5. Put up an inverted-V for 40M or multi-band.
6. May try out the loop antenna feature in QST.
7. Get the A & A Eng. spectrum analyzer kit working (for a friend).
8. Fix the Gary Breed 20M xcvr (for another friend, 9V1ZH).
9. Rework the case of the Classic.
10. Think about fixing the TX sequencing on the Radiokit QRP-20.
11. Bring XYL on a holiday (for putting up with me! HI HI!)
12. Send Chuck some green paper for the K5FO Newsletter.

If anyone has any experience with any of the above, I'd appreciate their advise. Especially concerning the performance of the A & A frequency counter, the one featured in the 1994 ARRL Handbook.

Other good news, my XYL is actually trying to learn morse!!! It's a miracle but if she gets her ticket, she will be the second XYL in the history of this country to get a ticket. Now, that's history in the making. :) Now I can give her some kits for X'mas :)

72 es 73,
Daniel
--

+-------------+-------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
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+-------------+-------------------------------------+

From ab4el.com Mon Jun 6 10:27:40 1994
From: penc@psuh02meteo.psu.edu
Subject: Norcal 40 Partial

Fellow QRP nuts:

Anyone have the address for the person at NorCal handling the partial NorCal 40 kit orders, and whether they are still available?

Sorry for the bandwidth, I lost the printout of the mail message regarding this and would like to get one. BTW I am a NorCal member (Who isn't with the great things they are doing for the hobby!).

Thanks, and I apologize for the BW.

Richard Penc
Research Meteorologist
Department of Meteorology
Penn State University
penc@psumeteo.psu.edu

From ab4el.com Sun Jun 5 23:43:25 1994
From: Jeff Jones <jeffj@crl.com>
Subject: NorCal 40 partial kit?

Could someone please post where to send $25 for the NorCal partial kit?

Jeff
jeffj@crl.com

From ab4el.com Sat Jun 11 01:08:21 1994
From: jason@persoft.persoft.com (Jason Penn)
Subject: NorCal 40 Parts Info

Greetings to all.

I have (almost) all my parts ready for the arrival of my NorCal 40 Partial Kit. I am posting to point out that Mouser is out of stock of 2.2 uF 50v non-polar electrolytic caps. They told me maybe sometime in October. The good news is Radio Shack stocks them. The bad news is they cost 4 times as much at about $1 each. Oh well, we only need 4 of them.

I also thought I would mention that in the parts list Doug so conciderately posted, I found what I think is a tiny nit. The rubber feet are listed as being from Digi-Key. I could only find the matching part number in the Mouser catalog.

On a related note: What are some ways to "match" the crystals for the filter? I read the pertinent parts of SS Design and the W1FB Design Notebook. The crystal characterizer instrument looks neat, but I'm sure not going to build one in the near future. At minimum I thought I would throw together a little oscillator and match them for frequency with my counter. As for the equivalent series resistance and

bandwidth, I don't think I have the appropriate gear here for that.
Suggestions?

Thanks!

--

Jason F. Penn N9RPT | Persoft, Inc. | jason@persoft.com
Whenever I want to find something, it's always in the last place I look.

From ab4el.com Thu Jun 9 09:04:27 1994
From: bcieslak@mkelan5.remnet.ab.com (Brian Cieslak)
Subject: NORCAL 40 up and running

MAny thanks to all who sent email to help out my xmit problem..FInally turned out to be some really fine copper hairs around the pins of U4 and C31 that I could only see with a magnifier (and after I cleaned up some of the flux).

I works great now...I got it set up for 1 Watt and worked Vermont last night.

I'm ready for the next project.

73,
Brian - AE9K

From ab4el.com Fri Jun 3 03:04:25 1994
Subject: NorCal 40, max voltage?
From: Clark Savage Turner WA3JPG <turner@safety.ICS.UCI.EDU>

Howdy all:

I am finally taking off for the Pacific Crest Trail in my Spiritual Quest (my 40th year :-), and I am taking 2 meters and the NorCal, of course. I got myself a 10 AA battery holder, and am considering 10 AA alkaline cells, total 15 + volts to start, then the voltage curve goes down, but I have plenty left as it drops.

Question: how about a little bit above 15 volts for the NorCal? Bad? I know that many alkaline cells will come out of the package above 1.5 volts, so I am wondering. I could always take one cell out and have a pack start at 13.5 volts and I still have some leeway down the voltage discharge curve.

Wish me luck. My schedule is not final yet, but I will leave from the Mojave Desert heading up into the Sierras this weekend, and will travel up to two months, may get to Oregon. Will probably have skeds on 7040 every couple of days in the early afternoon.

72

Clark
WA3JPG

From ab4el.com Mon Jun 6 11:22:36 1994
From: kub@upl.com (Steve Kubisch)
Subject: Norcal address

Hi Richard,

Tried e-mail direct but it bounced.

Here's the address and phone # for the NorCal 40:

Jim Cates
3241 Eastwood Rd.
Sacramento, CA. 95821
(916) 487-3580

Call him if you can, Jim's a great guy and will be happy to help you.

You'll love the NC40, It's a great little rig.

I just ordered my Sierra yesterday, can't wait.

73,
Steve - WW7Y NorCal #258

From ab4el.com Mon Jun 6 01:49:37 1994
From: dh@deneb.csustan.edu (Doug Hendricks)
Subject: NorCal June Meeting Rpt

The June meeting of the NorCal QRP Club was a special one, as it marks the 1 year anniversary of the club. What a difference a year has made. Today, there were 50 members present at the California Burger Restaurant in Pleasanton.

Jim Cates, WA6GER, a cofounder of the club, came in his famous "Dayton NorCal T-Shirt", which is a gold t-shirt with the cover of the March issue of QRPp on it, (the one with the club logo). Jim and I wore those to the first night at the hospitality room in Dayton. Jim had his "Fireball 15 meter Transmitter" with him. Nice job, and he says it is a lot of fun to build. That is the rig that was featured in 73 a couple of years ago, and uses a crystal oscillator from a computer. Nifty rig and tiny.

We had two special guests, J.B. Thompson, AA6IH, and Forest Miller, N6ZBZ, at

the meeting. The reason they are so special is that they drove up from Los Angeles just for the meeting. Now that is dedication and a real QRP fan. Both were amazed at the turnout and all of the rigs on display. We really enjoyed meeting our friends from the south. I asked them why they would drive so far, and they said that they had heard so much about the meetings that they wanted to see for themselves it we were really having so much fun. They said they are convinced now and will be back for more.

Wayne Burdick, N6KR, brought some Italian ham magazines for the members to look at, and he and Bob Warmke, W6CYX, set up and demonstrated the Sierra at the Livermore Swap earlier in the day. Naturally it drew a huge crowd, and then when Wayne fired up the Sierra and answered a CQ from Wyoming, he got him on the first call. He was using a hamstick mounted on his car for an antenna.... Wayne and Bob will be at Foothill, and if you want to see the Sierra in operation, look for the NorCal guys there. I will also be there on Saturday as will several other NorCal members. If you can't find us, stop by the hotdog booth at 10:00.

Bob Dyer, KD6VIO, brought a whole box of QRP homebrew goodies. Bob and I met about a year ago at HSC in Santa Clara, and I advised him to buy the QRP Classics book from the ARRL. Bob proudly showed me the fruits of his labors of the past year. He had the Mighty Mite, a 1 transistor 40 meter crystal controlled transmitter, a Bruene QRP watt meter, the 1 watt universal 40 meter transmitter with full qsk, a 15 meter transmitter, (it works but never made a contact) and a 30 meter MOuSeFET transmitter that is vfo controlled and covers the entire 30 meter band. Bob built all of the rigs ugly style, and he does nice work. When I first met Bob, he had no idea of what QRP was, or how to build a rig. He has been building for a year, and now has a NorCal 40, plus all of the other gear I just described, and Bob understands a lot about radio. He is a great example of how much a ham can learn if he does some building. Thank you Bob, you are the type of ham we want in our hobby.

Greg Garcia, WB6DAI, was at the meeting for the first time. He brought the Neophyte receiver, an audio filter, and the Little Joe Transmitter all built on boards that he made himself. Nice rigs, and Greg makes excellent quality boards.

Stan Cooper, K4DRD, brought a miniature key from South Africa. Stan had ordered it and brought the key to show. Naturally we all want one, and I would like to see the look on the guy's face in South Africa when all of the orders start to show up from California. The key cost $25 and here is the information for those of you who missed the meeting.

Miniature Morse Keys: Ideal collector's item. Individually boxed. Ex-South African Military. Limited stock available. $25.00 plus $3.00 shipping. Payment by Visa, MasterCard or bank draft. Contact Marc, ZS6HZ, Lima Electronics, P.O. Box 707, Bergvlei, 2012, Republic of South Africa; or 27-11-444-0444 (phone), 27-11-444-0459 (Fax).

[The above is for information only, KI6DS and NorCal are not connected in any way with this offer.]

I brought several of my rigs to the meeting. The purpose was to show the front panels that I made using my computer, laser printer and clear laminate material. The rigs were the New England 40-40, New England 30-40, NorCal 40 with digital display, PW ThumbTack 40 Receiver, and a prototype of something really exciting, a 75 Meter SSB Transceiver, the Epiphyte, which was designed by Derry Spittle, VE7QK. The first contact with the SSB rig was with two hams, one in Northern Washington on Whitby Island, and the other 3 blocks north of the Mexican border. They were having a QSO, and I broke into it. I had to say "Break KI6DS/QRP" three times, but then we had a 30 minute QSO. Both stations heard every word, I got a 57 and 59 report, and I was running 1 watt. What was really fun was that I identified the first time as KI6DS/Homebrew QRP. We had talked for about 10 minutes when one of the guys asked me if I had said "Homebrew". He was really thrilled to find that someone was building a SSB rig that sounded so clean. This rig is coming out in September QRPp and more details will be available then. The board is really small, about 3" x 4.5", and the parts should only cost about $40 to $50 to build it. I will have the rig with me Saturday at Foothill. If you would like to see it, stop me and I will take it out of my pocket to show you!!

Since this was the First Anniversary of NorCal, I wanted to give something to all of the members who have given me so much enjoyment the past year. I was puttering around my garage, and found a whole sack of apc variable capacitors. Hmmn, I saw a neat article in Popular Wireless about a 40 meter receiver that used 2 transistors, 3 diodes, several resistors and a couple of toroids. The receiver was built on a board with a front and back panel made from cookie sheet aluminum. I decided to put the kit together and give them away. When I checked my junk box, I found that I had most of the parts, (James, KI6JD, gave me a reel of assorted parts a couple of meetings ago, and I got several of the resistors, a couple of the capacitors and the diodes from that source). I made a quick call to Dan's Small Parts, and the rest of the parts were on the way. The rig is also featured in Doug DeMaw's Design Notebook. The article in PW shows how to build the rig using the piece of wood as a base, brass thumbtacks as tie points, and cookie sheet aluminum as front and back panels. I put together 40 of the kits and gave them away as a thank you to the members for coming to the meeting. The kits had the transistors, resistors, caps, variable cap, toroids, front and back panels and wooden base. All that is left to supply is the 100 pF trimcap and some #26 magnet wire. I am looking forward to the next meeting to see how they turn out.

If you are in the Livermore area on the first Sunday of the month, be sure to attend a NorCal QRP Club meeting. We get together at the California Burger Restaurant at the Santa Rita Exit on I-580 West of Livermore. The meeting starts at 11:00 and ends about 1 or 2 PM. No business meeting, very

casual, show and tell style. Hope to see you there.
72, Doug

Note: Can someone post this to the Packet System? My packet rig is in the shop, and I have no way to get this to QRP @ ALLUS. Appreciate the help.

72, Doug

From ab4el.com Mon Jun 6 21:54:37 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: NorCal June Meeting Rpt

> The rig is also featured in Doug DeMaw's Design Notebook.

Aaaaargh! I think I know exactly which rig that is... :-)

Did you build one?

Stephen

From ab4el.com Wed Jun 1 22:14:07 1994
From: burdick@interval.com (Wayne Burdick)
Subject: NorCal Sierra

Hi gang,

Back in January I sent out preliminary specs on the NorCal Sierra kit, including some speculative pricing. A lot has changed since then; we now have three working prototypes, final specs, and final pricing. (If you haven't heard of the Sierra, it's a multiband, superhet transciever kit that covers 80 through 15 meters using plug-in modules. It covers 150KHz on each band, puts out 2 to 4 watts, and the receiver has a crystal filter and good AGC range. The rig is intended for backpacking: small, only 30mA receive-mode current drain, and you can store the band modules in the cover. The kit comes with everything including a custom case, like the NorCal 40. Plenty of room for add-ins, since everything mounts on a single board. You add the paint and decals.)

We sent out a brochure to all NorCal members last month. If you are interested in the Sierra but did not get a brochure, let me know and I'll send you one. It includes a high-resolution drawing showing what the rig looks like from the top and front.

The rig is priced so that the club won't lose money, but it's still way

under anything else you can get that's multiband ($160 for the basic rig, $25 for each band module). By the way, if you want to take a "wait and see" attitude (often a wise course), don't worry; we will probably put together some extra kits beyond what is ordered and make them available after the first wave have been built. Little refinements in the documentation are inevitable.

The rig is a club project, so if you're not a member of NorCal, you'll have to come up with $5 for dues. Doug Hendricks puts out a great quarterly newsletter for the money.

73,
Wayne

P.S. -- Thanks for all of the comments and suggestions about the Sierra design. Our next project--I hope--will be a miniature automatic antenna tuner for QRP rigs, and we could use your suggestions for that one, too. (Does anyone already make a cheap, miniature, automatic antenna tuner?)

From ab4el.com Fri Jun 3 06:25:20 1994
From: jjw@seastar.seastar.org (John Welch)
Subject: Re: NorCal Sierra booklet

In your article <9406020213.AA24224@interval.interval.com> ["NorCal Sierra"], you wrote:

> We sent out a brochure to all NorCal members last month. If you are
> interested in the Sierra but did not get a brochure, let me know and I'll
> send you one. It includes a high-resolution drawing showing what the rig
> looks like from the top and front.

I joined on Saturday night at Dayton - Doug thought I was already a member but I wasn't at that point, so I joined. Would it be possible for a copy of the booklet to be sent to me? John Welch 1307H N. Richmond Rd McHenry IL 60050.

I don't recall if this is just a CW rig or will it also do SSB? And what frequency is the IF? If it's at 9MHz, I can probably match up several sets of filters using crystals from Hosfelt Electronics in Ohio. (see June QRPp, and the next upcoming issue for details...)

--
John Welch, N9JZW

From ab4el.com Sun Jun 5 17:27:21 1994
From: Bob Gobrick WA6ERB <70466.1405@CompuServe.COM>
Subject: NorCal Sierra Semi-Kits

TO: >INTERNET:qrp@think.com

Open Letter to Wayne Burdick N6KR

Wayne - I wanted to thank you publicly for your efforts on the NorCal 40 and the latest NorCal offering - the Sierra (I also enjoyed your QEX article on the Safari). I have to admit the NorCal 40 was just a great rig to build and the board mounted connectors and controls along with the simple cabinet really made it super enjoyable to build (I had Stan silkscreen my cabinet for the "professional look" - hi).

Wayne let me query you on an item, and first let me say that I hesitated asking this in an open forum since the NorCal gang might take it wrong (well, yes, I am a member - hi). I encourage the gang of volunteers to offer the Sierra as a bare-bones offering - say PC board, hard to buy parts, like the edge connector and the cabinet. This would be in addition to the full kit offering. I believe you have copyrighted your design so I suspect you'll want to keep this as a member offering.

The reason why I ask is that (and here is where I hope you don't take this wrong) I feel the Sierra is a little bit overpriced when compared to the NorCal 40. The basic Sierra (no band modules) at $160 seems a little high when you compare it to the NorCal 40. The NorCal 40 has the 40 m band xtals and torroids while the Sierra has a more expensive variable cap and IF amp stage. That's $80 vs $160. I suspect that either the NorCal 40 was underpriced or the Sierra is overpriced (or the reverse - hi). Since my junque box is getting pretty well stocked (too many unbuilt projects) I'd like to take a crack at stuffing my own parts to save a few pennies. I guess I'm just getting a little more selective in the number of kits I build (I only have four 40 meters rigs right now ;-) and I'm looking at the value of another NE-602 rig.

Anyway Wayne I'd appreciate you and the NorCal gang considering an initial semi-kit offering along with the full kit offering. I've chatted a little about this to Doug so maybe he can give you his thoughts. Again thanks for all the excitement that you've given the West Coast with your move out there and the formation of the NorCal club - wish I was back there to partake in all the fun at the Livermore get-togethers (I moved from Tracy California east to Montreal and Newfoundland while you moved from New England back West).

73, 72 Bob VO1DRB/WA6ERB

PS: I can't believe the rumours of some other NorCal projects
like a QRP automatic antenna tuner and QRP SSB rig.... WOW.

From ab4el.com Thu Jun 2 11:55:32 1994
From: burdick@interval.com (Wayne Burdick)
Subject: Re: NorCal-40

>Will the Sierra Rig design/artwork make it into the public domain?
>Personally, I think that of course you have the right to keep you designs
>to yourself, but the bottom line is that people that build kits, build kits.
>And the poeple that like to scrounge, and build their own p.c. boards are
>very unique...

Brad,

Thanks for your comments. The club is now selling a "Partial Kit" of the
NorCal 40 with just the PC board, case, and manual, but at this point we
could also supply just the documentation for those who want to do it all
themselves. This will also be the case for the Sierra at some point.

You can call Jim Cates anytime to ask for a copy of the manual, paying only
for postage and printing costs (about $2 I'd guess). His number is
916-487-3580.

As for writing an article on either the NorCal 40 or the Sierra, I expect
to do this later this year. I may try to interest ARRL Hq in the Sierra for
the Handbook or for QST. In the mean time, the entire design of all NorCal
rigs is copyrighted, so I'd prefer that you go through Jim to obtain the
documentation.

73,
Wayne

From ab4el.com Tue Jun 7 11:11:24 1994
From: bcieslak@mkelan5.remnet.ab.com (Brian Cieslak)
Subject: NORCAL40

Hey gang,
Schools over and I finally found the time to build up that old NORCAL 40 kit I
had laying around....but I got problems...Here the scenario.

The rcvr works great.....but no rf out or tx monitor.....

I used a scope and found lots of rf on the VFO side of C31(10 pf) but

none on the U4 side of C31...unless I lift w3 then theres a little...

All the KEYline voltages go to the right places....When I key the rig, the output of u4 goes high to around 7 volts DC, no ac detected. Also I see the same effect occur on pin 6 and 7 where the xtal is connected.

I am ready to replace u4 , ne602, with a spare ne612 I have..But was also wondering if the asscoiated xtal may be bad instead (cuz of the scope results).

Any tips would help if I find that u4 wasn't the culprit..

73, Brian, AE9K

From ab4el.com Wed Jun 8 10:42:51 1994
From: LVE@mica.inel.gov
Subject: Observation...

It would appear that some of you folks spend more time on the internet than on the air... is this what ham radio is coming to?!? Too bad this kind of information exchange no longer takes place on the air; I can actually remember a time when it did. Oh well; technology marches on...

73E-2, Larry W1HUE/7

From ab4el.com Wed Jun 8 11:12:12 1994
Subject: Re: Observation...
From: "John F. Woods" <jfw@ksr.com>

> It would appear that some of you folks spend more time on the internet than
> on the air... is this what ham radio is coming to?!?

Well, all the day jobs involving yakking on the radio are taken ;-).

73, John, WB7EEL/1

From ab4el.com Wed Jun 8 12:48:21 1994
From: rossi@VFL.Paramax.COM
Subject: Re: Observation...

>It would appear that some of you folks spend more time on the internet than
>on the air... is this what ham radio is coming to?!? Too bad this kind of
>information exchange no longer takes place on the air; I can actually remember
>a time when it did. Oh well; technology marches on...

Yea, Who needs a radio when you have a computer? :-)

Don't they even have computer programs that simulate operating on the radio? Don't even need a license for that.

Pete Rossi - WA3NNA
rossi@vfl.paramax.com
Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania

From ab4el.com Wed Jun 8 12:50:47 1994
From: btoback@netcom.com (Bruce Toback)
Subject: Re: Observation...

>It would appear that some of you folks spend more time on the internet than
>on the air... is this what ham radio is coming to?!? Too bad this kind of
>information exchange no longer takes place on the air; I can actually remember
>a time when it did. Oh well; technology marches on...

That's because you'd be pretty conspicuous sitting at your desk with
a keyer and a wire stretched out across a dozen cubies :-).

-- Bruce
KN6MN

From ab4el.com Wed Jun 8 13:18:20 1994
Subject: Re: Observation...
From: "John F. Woods" <jfw@ksr.com>

> >It would appear that some of you folks spend more time on the internet than
> >on the air... is this what ham radio is coming to?!? Too bad this kind of
> >information exchange no longer takes place on the air; I can actually remember
> >a time when it did. Oh well; technology marches on...
>
> That's because you'd be pretty conspicuous sitting at your desk with
> a keyer and a wire stretched out across a dozen cubies :-).

Hmm. I've already got a mouse rigged up as a paddle switch (no keyer wired
up yet, though :-); there's already a lot of thinnet cable strung all over the
place here; all I have to do is figure out how to get the antenna through the
blasted windows that don't open and build a rig in a dead walkman case and I'd
be all set...   :-)

73, John, WB7EEL/1

From ab4el.com Wed Jun 8 13:19:17 1994
Subject: Re: Observation...
From: "John F. Woods" <jfw@ksr.com>

> Yea, Who needs a radio when you have a computer? :-)

> Don't they even have computer programs that simulate operating on the
> radio? Don't even need a license for that.

In one of the interminable rec.radio.amateur.misc
code/nocode/code/nocode/code/nocode... flamewars, someone mentioned the
possibility of entirely automating the typical DXer's station, to which I
replied something along the lines of "Great, just what I've been looking
for: a computer that can enjoy my hobby for me, freeing up my valuable
leisure time so I can...uh..."

73, John, WB7EEL/1

From ab4el.com Thu Jun 9 10:25:22 1994
From: "DONALD A. COLEMAN (EXT. 2850)" <DACOLEMAN@fair1.fairfield.edu>
Subject: Re: Observation...

You hit the nail on the head with that "observation," om

73 de W1VOQ

From ab4el.com Thu Jun 2 07:16:31 1994
From: ATXR@CENVMC.CENCOL.ON.CA
Subject: ohr Classic

From: Ted Rosen, Architectural Technology Department
I am happy to report that my ohr Classic is now up and running. I am
really pleased with this kit. It was the first transceiver kit that
I have built, and there was much for me to learn from it. Thanks to
all on this listserv for their comments and suggestions, and
special thanks to Jeff, AC4HF, and Dick at OHR who was particularly
helpful. I would be interested in hearing from others who have
built this kit.
Ted, VA3TAR

From ab4el.com Sat Jun 4 14:52:52 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: OHR Classic Dual

Hi Gang,

        I need help!

        I am building my OHR Classic Dual Bander and have run into some
snags. The receive side seems to be working but the transmit side is dead as
far as I can tell. Could anyone else who have built the same please advise:-

0. Input voltage at U100 is 13.11 V and output is 8.91 V. This is provided for comparison. Scope has input capacitance of about 20pF and probe has input capacitance and resistance of about 72.5 pF and 237 ohms at the x1 probe setting and 17.5 pF and 9 Mohm at the x10 probe setting. The bandwidth is 15 MHz and 60 MHz respectively for the probe. Scope has 50 MHz bandwidth.

1. The signal at the "Test Loop" on the Oscillator board for 20M is substantially smaller than that for 40M, under the scope. This situation can be rectified by playing with the L101 and L100 but the setting is quite critical. When it is set properly, I am getting about 0.54 V p-p at the test loop for 20M and about 5.6 for 40M. Could anyone verify this? Measurements was made with the probe on the x1 (no attenuation) setting in RX mode.

2. The alignment instructions said to measure frequency at C141 but I was unable to do this for the 20M band selection because the oscillator would stop, perhaps due to excessive loading. However I did check that the oscillation for 20M was substantially lower than for the 40M band here. The signal here was about 110 mV (0.11 V) p-p for 20M and about 1.32 V p-p for 40M! This is almost 10 times bigger! Measurements were made using the x10 probe setting, ie. the above values I was the result of 10 times what I measured off the scope. Using the x1 setting, the 40M signal measure at C141 was only 0.38 V p-p. The 20M readings using x1 probe setting is not available because the oscillator would stop if I stuck the probe at C141.

* Note that the x1 and x10 setting is not in scale of 10 because of the different probe capacitance of the two settings thus providing a slightly different loading to the circuit under test.

3. T/R Mix oscillator signal measured off pin 6 of U203 (NE602AN) on the receive board was about 1.8 V p-p. This is same for any setting. Measurements made using the x1 setting on the probe.

4. On Tune mode (TX mode) the signal measured at the junction of D309 and D310 on the T/R board was a real mix of signals and the p-p voltage (x1 probe setting) was about 0.65 V for 20M and 40M.

5. On Tune Mode (TX mode) the signal measured at the junction of D301 and D302 on the T/R board was a clean sine wave and the p-p voltage (measured using the x1 probe setting) for 20M was about 95 mV (0.095 V) and for 40M was about 140 mV (0.14 V).

6. On Tune Mode (TX mode), p-p signal on the collector of Q300 on the T/R board (measured off the casing of Q300) (x1 probe setting) was about 50 mV for 20M and 40M.

7. On Tune Mode (TX mode), p-p signal on the collector of Q301 on the T/R board (measure off the casing of Q301, 2N3866) (x1 probe setting) with power setting set at maximum, was 0.18 V for 20M and 0.44 V for 40M.

8. There was no signal on the collector of Q302 on any mode. This was measured off the heatsink tab of the 2SC2075.

Due to the measurements at item 8, I am suspecting that Q302, the PA final is either bad or being under driven as the 2N3866 driver is putting at best 0.44 V at into Q302's base which is not biased (Class C).

I would really, really, really, appreciate it if someone could take the trouble to verify the above for me. Any advise also welcomed. I am getting desperate. For the past 3 days I have not slept!!! Thanks.

73,
Daniel
--

+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+--------------------------------------+

From ab4el.com Sat Jun 4 14:52:49 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: OHR Classic problems

Hi Gang,

BTW, in addition to the previous post, I checked the Q302 in-site and it was not very helpful because of the low impedances around it. I will probably take it out soon but right now I am putting everything on hold until I get some advise from the list. Tks. I'll be waiting.

73,
Daniel
--

+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+--------------------------------------+

From ab4el.com Tue May 31 13:35:42 1994
From: "Robert E. Easton" <bobea@watson.ibm.com>
Subject: OHR Spirit Problem

> I'm wondering if it's usual that one has to turn on the volume to
> about 80% level in order to get some reasonable output. ...

I run the audio at about the 40% setting on my Spirit and have plenty of volume. That's with 8 ohm headphones. The only time I need too crank it up is when I use an external speaker.   Maybe you need to look for a bug...

 Bob Easton

From ab4el.com Mon May 30 11:50:05 1994
From: "Behrens J\vrg" <bhs@fh100.ubszh.net.CH>
Subject: OHR-Spirit problem

This is a question to the OHR-kit experts of this list. I've finished my OHR-Spirit recently (great kit! well - others dit comment on that already) and it seems to work nicely (the sensitivity is great!) but I'm wondering if it's usual that one has to turn on the volume to about 80% level in order to get some reasonable output. The phones I'm using are ok ;-) The band is 20m, the antenna is a multiband 40/20/15 which works fine with a R5000 HF receiver, and DC voltage supply is fine, too. Any ideas?

Thanks for any comments,

73, Joerg (HB9 - TXing into a dummy load - still didn't have time for the exam...)

From ab4el.com Wed Jun 8 19:36:50 1994
From: Bensondj@aol.com
Subject: On the Road Again

Gang-

I'll be in San Jose from Mon 6/13 afternoon through Thurs 6/16 AM. Let me know if you'd like to get together and we'll set something up.

72, Dave - NN1G

From ab4el.com Thu Jun 9 12:21:49 1994
From: janderson@polycom.com
Subject: Re: On the Road Again

          Dave:

It would be a pleasure to meet you - I'm just getting into QRP
and have ordered both the 40-40 & 30-40, but I would very much
like to get into designing my own rigs.

Let me know if you have any free time while you're here, and if
anyone else from the gang is getting together with you.

Cheers & 73,

Jeff, WA6AHL

From ab4el.com Fri Jun 10 08:54:50 1994
From: Gary M Diana <gmd@adm01.rfc.comm.harris.com>
Subject: PCB layout software for the PC

Hello All -

   Anyone out there have any experience with Printed Circuit Board
(PCB) layout software for the PC? I've been making circuit boards
from magazine articles, now it's time to make boards from schematics
which currently have no artwork available; for example, some of
the projects in "Solid State Design for the Radio Amateur".

Gotta get those ducks in line for the fall/winter building season!

73, gary n2jgu

** listen for wb8ygg/2/qrp on FD weekend **
** [160m, 80m, 40m, 20m CW]   **

From ab4el.com Wed Jun 8 08:18:10 1994
From: Clark Fishman (FSAC-FCD) <cfishman@PICA.ARMY.MIL>
Subject: PIN Diode Info

You can buy Hewlett Packard PIN diodes from
Penstock Phone: 1 800 PENSTOC.

I bought the 5082-3081   Read Ulrich Rohde's article
in QST this month...he recommend either the 3080 or the 3081

I forgot   which one....These puppies ain't cheap...
over $2.00 each   ..After I install some in one of my
IC730's I will compare it to the unmodfied one

Let me know your experiences

wa2unn

From ab4el.com Wed Jun 8 12:26:26 1994
From: xenolith@halcyon.com (Kevin Purcell)
Subject: Re: PIN Diode Info

wa2unn said:

>You can buy Hewlett Packard PIN diodes from
>Penstock Phone: 1 800 PENSTOC.
>
>I bought the 5082-3081   Read Ulrich Rohde's article
>in QST this month...he recommend either the 3080 or the 3081
>
>I forgot   which one....These puppies ain't cheap...
>over $2.00 each   ..After I install some in one of my
>IC730's I will compare it to the unmodfied one

This reminds me of something that crossed the list last year (from Ed Pacyna perhaps?) about using the IN4007 rectifier diode as a PIN diode. To boost its PIV there is an extra insulating layer in the diode. The reports were that it does work as an RF switch. Has anybody made any real measurements on these or compared them to real PIN diodes?

QRP on the cheap (as always!)

Kevin Purcell, N7WIM / G8UDP
xenolith@halcyon.com   "Organising programmers is like herding cats"
(206) 649-6489

From ab4el.com Wed Jun 1 17:09:01 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: Political Statement by K5FO

Gang,

Excuse the bandwidth here, but I think this is important enough that I beg the indulgence of the group. Typically we don't go into flame wars, but I'd guess once in a while we need to stir the waters. Again, please forgive me for I know not what I do.

On Nov 13th of last year (1993) I posted the following. Nice thing about internet. Everything that you say and do is archived. Bad thing about the internet. Everything that you say and do is archived.

.....here it is verbatim from the archives.......

Date: Sat, 13 Nov 93 21:26:36 -0600
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Message-Id: <9311140326.AA07638@chuck.dallas.sgi.com>
To: qrp@Think.COM
Subject: Hambrew es QRPp Review

Gang,

I received a few days ago in the mail two items: QRPp - Journal of the Northern California QRP Club and Hambrew - for Amateur Radio Designers and Builders.

Let me give my impressions of both, and these are my impressions and mine alone.

	HAMBREW	QRPp
Date	Autumn 1993	December 1993
Pages (including cover)	48 pages	60 pages
Size	5.5"W x 8.5"H	5.5"W x 8.5"H
Weight	2.7oz	2.3oz
	(weighed on electronic postal scale)	
Postage, if mailed 1st	$0.75	$0.75
I don't have the 3rd class rates.....		
Paper	60lb slick	20lb nongloss
Pictures	3 full page shots B&W including F&B covers	No full page photos
	22 B&W Photos (good qua.) total space of 10 pgs	1 B&W Photo (scanned) about 1/3 page total
Cartoons	2/3 of a page total	none
Advertising	4.5 pages	none

HAMBREW ARTICLES (already table of contents posted to net)

1. Ramsey 30 Meter Transmitter Kit Review - Ramsey might go after them after this one. They changed the box (RS), added LED pwr, and other stuff to really canabalize (sp?) the thing. I personally don't think the results could be counted as a Ramsey kit. :-) I really didn't like the way they split the article after one page and continued toward the last of the publication.

They did this in a bunch of places. A definite turnoff for me.

2. Zapp The DX With The Zapper - how to build a mobile antenna for about $30 to $50 using PVC es stuff. "The Zapper" a play on the "Bug Catcher". ;-) Cute.

3. The NorthWest QRP Club "30-30" CW Transmitter by KG7CR. A crystal controlled QRP rig. 2.5 pages including one page for schematic and parts list and .5 page for winding toroids. Not much meat at all, like maybe a PC board layout for those who are interested.

And other articles, which I leave for the others in the group to give us their feedback on. I wasn't too thrilled myself, but that's just me, I'm sure.

QRPp Articles (already a table of contents posted to the net, I think)

1. A bunch of articles by various people from this group, including yours truly. So, a bunch of it will be review for those who read this group.
2. Article by Wayne Burdick, N6KR, designer and father of the NorCal 40 Rig! This article alone is worth the $5 price for a whole years subscription to the newsxxxxx ooops, Journal of the Northern California QRP Club. :-) Four pages of the description of the circuits and two full pages for the schematics. So, those of you who did not get to buy the kit, here's your chance to get a look at it. No PC board layout. We'll let Wayne worry about that deal. It's his puppy, so to speak.
3. Three and a half pages on an Audio Filter by Jim Pepper, W6QIF, including graphs of frequency responses and circuit diagrams.
4. Three and a half pages with NorCal Club members, numbers, and addresses. I see some of you there in the list. Who's who of the internet. :-)

And I didn't want to get too detailed in the reviews.

Summary. Hambrew - $20 per year, four issues sent 3rd CLASS mail.
QRPp   - $5 per year, four issues sent 1st CLASS mail.

I enjoyed the QRPp more and spent more time wading through it, since it has more print and more info and a lot fewer pictures and advertising.

Hambrew, P.O. Box 260083, Lakewood, CO 80226-0083 $20/yr
QRPp, Jim Cates, WA6GER, 3241 Eastwood Rd., Sacramento, CA 95821 $5/yr

I don't think that Hambrew is aimed or going to attempt to do much for the QRP crowd. I got a call from George De Grazio, WF0K, Publisher, after I called on his 800-5-HAM-RIG number to see where my copy was.

I received a copy first class mail a few days letter with note that this was a sample issue. What? I paid $20 for one year plus a bonus issue. Does he not have me down as a regular subscriber? Those of you who have not received your issue, call him. Since they are being sent 3RD Class mail and we know what the US Postal Service does to third class mail, I'd check up on it.

Oh. There will be no back issues of QRPp. Issue will be mailed out Dec 1, 1993 first class mail. Be sure to get your money in post haste.

DISCLAIMER: I am a member of the NorCal Club, but I don't get anything special from them, so this is a review on what I have seen. The above is my opinion(s) and I'd be glad to have anyone in this group that has seen the Hambrew issue and disagrees with the review, let US know. I make errors, but rarely. :-)

dit dit
.....end of article except for signature....

Now excerpt in its entirety from "The NWQ Newsletter", Volume 2 Number 6, A Publication of The Northwest QRP Club, April 1994.

"Literary Criticism" well-meaning or mean-Sprited?

By Bill Todd - N7MFB
President, NW QRP Club

"Earlier this month, I read an article in a fairly new QRP Publication that was quite disturbing to me personally.

The article in question was a point by point comparison and criticism of the writers favorite QRP Publication and that of the first issue of the "HamBrew" magizine (sic) (which is not a QRP publication in the first place).

The writer went on and on about how his favorite QRP magazine was vastly superior in every way to the "Hambrew" magazine. The writer even made fun of the paper "Hambrew" is printed on. Although I have not seen it, I understand that this same writer also wrote an article that was carried on the Internet BBS system criticizing the very first issue of the Colorado QRP Club's "Low Down" magazine.

I wonder - what is the purpose of this kind of literary criticism? It struck me at the time as being just another example of an individual trying to put someone down to make himself look good. If the writer really cared about improving "Hambrew", wouldn't a personal letter have been more appropriate?

I can tell you from personal experience that the Editor of any publication receives constructive criticism from time to time. It is never pleasant to receive these letters, but I feel they are necessary. Public criticism on the other hand, is not constructive but often mean-spirited.

I call on my fellow QRP editors to show some responsibility, and not allow these self serving 'critiques' to see their way into any more QRP publications."

---

pp 1. He's read QRPp!!

pp 2. Quite a jump here. I didn't say that QRPp was my favorite QRP publication.

pp 3. I did not make fun of the paper. I have published 58 refereed articles in physics journals and four books. I think I know English, but someone point it out to me if I missed the point. How can you call Internet a BBS system? How can you talk about something (my review of CQC) you haven't read?

pp 4. I was not trying to make myself look good. I don't have an ego problem. Ask anyone who has personally met me. I did the review for the QRP mailing group. I did it to help people, who with their own hard earned money have to make decisions on where to get the best and most information for their money. I used the data at hand, not go around and create it.

pp 5. I completely disagree with this paragraph in it's entirety. The purpose of a review is to provide one's view(s) on a topic, another piece of work, or manufactured goods. You can not supress freedom to convey one's view(s). The review is one such method for doing so. Mr Todd would like everything to be perfect, but unfortunately that is not the case. To call me mean-spirited (implied by the fact that he used the term often and in reference to my posting) is carrying his critique too far and I take it personally, both to myself and my reputation.

pp 6. Looks like I won't get to publish anymore, since he has called

on all newsletters to no allow "these self serving critiques" to be published. This paragraph says that maybe the article shouldn't have been published either. Looks like I'll have to start my own newsletter. :-) :-)

I was disturbed by all this for several reasons. It was aimed at me. It was an assault on my character. Someone distorted (I think) the facts.

I think I have been positive in 95% or more of my posts to this group. Shakespeare was right. The world is a stage.

NOTE: The logo for Twilight Publishing Company, created early last year looks similar to the NW QRP Club's logo. It was copied and I have witnesses to that fact.

I now go and crawl back into my cave.

dit dit

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Wed Jun 1 21:18:13 1994
From: howie cahn <wb2cpu@world.std.com>
Subject: Re: Political Statement by K5FO

For what it's worth...

I thought Chuck's post comparing the two publications was quite appropriate and accurate. If I tried to make a similar comparison, I would have said about the same things.

72/73... howie
wb2cpu@world.std.com

From ab4el.com Thu Jun 2 09:03:53 1994
Subject: Re: Political Statement by K5FO
From: "John F. Woods" <jfw@ksr.com>

So which "fairly new QRP publication" did this get reprinted in?
I assume they didn't bother to ask permission.

From ab4el.com Wed Jun 8 14:58:03 1994
From: rossi@VFL.Paramax.COM

Subject: power measurement

I was trying to measure the output of my two new QRP rigs and ran into a slight problem. I was measuring the output voltage across my dummy load with my scope and using:

```
P  =  E**2 / R
```

Now, I know that the voltage measured needs to be converted to RMS but, do I want to use the pk-pk reading? or 1/2 of the pk-pk reading?

I suspect that 1/2 of the pk-pk reading is correct since this is what I measured...

I am seeing 55 volts pk-pk across my 50 ohm dummy. If I use this value I get:

```
(55 * .707) ** 2 / 50   =  30.2 watts   Wow!!  No way!!
```

But of I use 1/2 of the pk-pk reading or 27.5 then I get:

```
(27.5 * .707) ** 2 / 50 =  7.56 watts.  OK.  This is believable....
```

... but is it right?

Pete Rossi - WA3NNA
rossi@vfl.paramax.com
Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania

From ab4el.com Wed Jun 8 15:28:19 1994
Subject: Re: power measurement
From: "John F. Woods" <jfw@ksr.com>

For a sine wave, Vrms is $\sqrt{2}$ Vpk ("peak voltage"), and Vpk is 1/2 Vpk-pk ("peak to peak" voltage). Which is what you figured.

From ab4el.com Wed Jun 8 17:55:57 1994
Subject: Re: power measurement
From: "John F. Woods" <jfw@ksr.com>

> John:
> Careful! - I made the same mistake yesterday on this list...
> Vrms = ((2**(1/2)) / 2) * Vpk, rather than (2**(1/2))*Vpk.
> ^^^

Yup, Pete already caught that mistake. That's what I get for paying more attention to doing silly ascii graphics right than to making sure that what I'm TYPING is right...

From ab4el.com Sat May 28 10:05:21 1994
From: Bob Smith <0005512847@mcimail.com>
Subject: Re: QRP Digest V0 #109

Looking to buy a QRP rig (can that term apply!).
Here's what I've narrowed it down to:

S and S Ark 4
NN1G 40/40
The A an A Engineering 40 Meter
Oak Hills Sprint or Classic.

The question - your opinion on what I will be happiest with. Only have time to build 1 and would like to make the most informed decision.

My hot buttons are size and superhet (not absolutely required).

I am familiar with the specs so I am looking more for user opinion.

Thanks in advance and looking forward to joining your esteemed ranks.

From ab4el.com Fri Jun 10 12:08:24 1994
From: mvjf@mvubr.att.com (James M Fitton +1 508 960 2577)
Subject: QRP Nets

Hi Tom and Inet gang:

NEN (Northeast) QRP CW Net meets at 8 am est, on 7.040 mHz, on Sat. mornings. NCS (Net Control Stations) are K3TKS & WA1JXR, and the main objective is just to get your call acknowleged by the NCS, not to send any traffic etc.... Sometimes there are over 30 check-ins (QNIs) and it may takes an hour to accomplish this with help from QSP (relay stations).

Periodically the total number of your QNIs will be published in the QRP-ARCI Quarterly newsletter (QQ). If you make it at least 25 times, you are eligible for a nice certificate from QRP-ARCI.

72   W1FMR

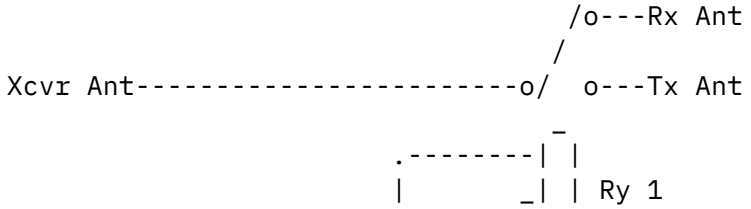
From ab4el.com Fri Jun 10 15:48:57 1994
From: Jack Bryant <Jack.Bryant@math.tamu.edu>
Subject: QRP QSK and relay(s)!

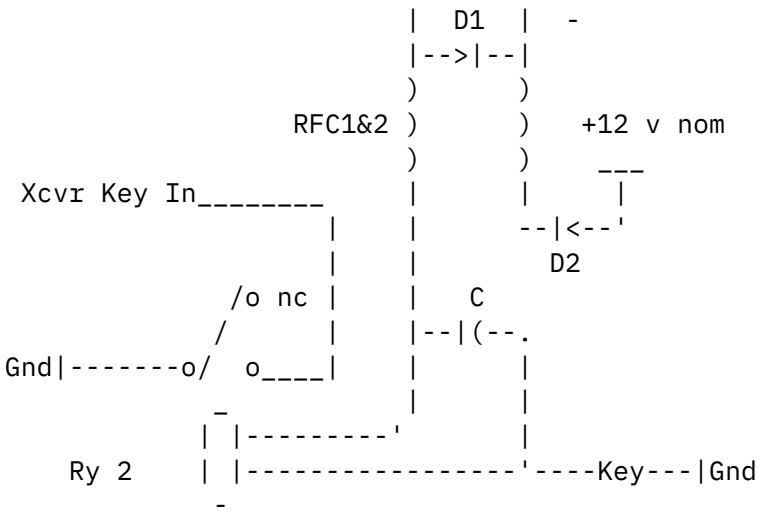
Hi gang,

I have never posted anything anywhere, but I read, and a while back there was a thread which was strongly anti-relay. My main radio is a Ten-Tec Argosy, which uses PIN diodes and quarter wave pi networks to perform T/R switching; however, I often use noisy antennas for Tx and different antennas for Rx... for example, a vertical array for Tx and a Beverage for Rx. I suppose I could get into the Argosy and modify it, but a noninvasive solution is easy and very inexpensive. It is all analogue (ok, a relay is digital, but the timing is analogue), and I did not invent it: I got the circuit from the 11th edition of Hints & Kinks (ARRL), page 4-1, the idea from Herbert H. Stevens, W6RSP. Modern reed relays are many times faster than the relays available back then, and are entirely suitable for less than 50 watt levels. The relays switch at K5FO rates; I only needed up to about 40 wpm.

The circuit (an ASCII version attempt follows) works because if you shunt a relay with a reverse biased diode then it holds longer, while if you shunt a relay with a condenser then it delays the drop in time. The relays are 5 volt relays, Radio Shack 275-332, the diodes are 1N4001 (=almost anything), and C can be ~30 mfd @ 10 v. A reed relay is no good at switching RF, but in this circuit it doesn't _switch_ anything, sort of like the railroad switch: the RF switch has no trains running downline when it changes state. I am sort of skeptical about the RF properties inside the relay, so I isolated the DC connection from the relay with RFCs; this is also handy since the 5 volt relays don't need 6 volts. I have no idea what specs the RFC's were: junk box. But key down the relays had about 5 volts across. None of this stuff is critical.

To adapt this circuit to switch Tx/Rx with a common antenna all you do is put the antenna where XcvrAnt is now, the transmitter output where the Tx Ant is now, and the receiver input where the Rx Ant is now.

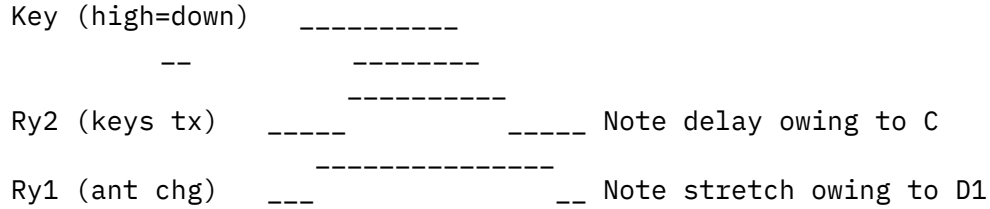




Parts list:

C	About 30 mfd, 10 v
D1, 2	1N4001, not critical
RFC1, 2	Junk box pi type chokes, select to drop relay voltage to 5 volts with 13 volts supplied (about my average in daytime)
Ry1, 2	5 volt reed relays, spdt, contacts rated 1 A 125 VAC

Timing:



-Jack W5TFB

From ab4el.com Mon Jun 6 08:32:13 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: QRP Show in MD in Aug

QRP Show and Tell In Laurel, MD, first Saturday of August 1994:

It's been several years since we had one of these, and it's time to start up again. We don't have any organized QRP groups in this area (despite what you may have heard about the Maryland Milliwatts, which

was more of a joke than an actual organization), but there is a lot of interest. This is, after all, a major metropolitan area (between Washington, DC, Baltimore and Annapolis) and lots of QRPers.

Here's the deal, as usual: When Maryland Radio Center opens up at 10 AM, several QRPers will set up their goodies on the tables in the MRC ham radio library room. We'll be there until they close at 3 PM (formerly 4 PM), and anyone who walks thru the doors and wants to show off QRP goodies or just look at some and talk QRP is welcome to do so. There are no formal presentations or anything, pure anarchy but lots of QRP! I'll be there, along with K3TKS and KD3S, and perhaps some other QRP notables (we have a few in this area).

By the way, thanks to KI6DS (of NorCal fame) the MRC library has a set of photocopies of the QRP Quarterly from 1985 to 1992, and thanks to WA8MCQ (me) it also has photocopies of the ENTIRE run of The Milliwatt. Truly knowledgeable QRPers genuflect and drool at the mere mention of the Milliwatt, which has almost mystical status in the history of QRP. (Thanks to Rich Arland, K7YHA, for giving me the entire press run, which I still have and keep under constant alarmed surveillance.)

(True Historical Fact--I am one of the two co-founders of the Milliwatt, although by far the lesser; I was already publishing its predecessor, QRP/8, which contained a true QRP section. Ade Weiss, W0RSP, K8EEG/0 in those days, found out about it, came on board, easily convinced me to go over to 100% QRP, which is why virtually everyone was getting it anyhow, changed the method of printing, took over the printing and most of the editing, etc, and the rest is history. Of course it was due to his vision and drive and incredible amount of hard work that it succeeded (and existed in the first place), and he gets 99.95% of the credit for it all. In fact, I wimped out after 4 issues and joined USAF, which was an attractive alternative to being drafted during the height of the Viet Nam war! And even for those 4 issues he gets 99% of the credit. For his work with the Milliwatt, as well as his long-running QRP column in CQ magazine and several technical articles in the main stream ham press, Ade Weiss is richly deserving of induction into the QRP Hall of Fame...whoops--this is supposed to be an event announcement, not another Political Statement....)

MRC is located in Laurel, halfway between Washington and Baltimore. 'Most everyone in the area who might be interested in the QRP Show and Tell probably knows where it is already, but if anyone needs directions I can provide them. If you live in the area or will be around here at the time, come on over and join us for a good, long QRP gathering. We don't do it anywhere near as often as the NorCal

or Michigan folks (it's been, what, 3 or 4 years now?), but we have
just as much fun!

    WA8MCQ%hambbs@wb3ffv.ampr.org Internet, WA8MCQ@WB3V.MD
--
Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Tue May 31 09:57:41 1994
From: "Bob Scott" <bob_scott@cpqm.saic.com>
Subject: R1 ???

                    R1 ???
OK, I give up. I have searched my archives and hoped that someone
else would ask, but since no one has. What is a R1? I know it
is a receiver of some sort and that Laura is building one, but
where do I find the circuit (or is it a commercial kit?)?

Hope that all had a good weekend. I borrowed a 100 Mhz scope from
work and spent part of the weekend discovering that my power
meter was bad and that my NorCal 40 was putting out 1.4 watts vs
the <.5 watt I thought it was. Also checked out and
aligned my Oak Hills Spirit while I was at it. All thanks to the
article in the latest QRPp on measuring output power.

Looking forward to Manassas hamfest this weekend.

Thanks in advance.

73 Bob AC4QO

From ab4el.com Tue May 31 12:03:26 1994
From: lhalliday@creo.bc.ca
Subject: Re: R1 ???

     Bob,

     sorry for not filling people in on this...the R1 and R2
     receivers and T2 exciter are the result of work done by Rick
     Campbell KK7B, and written up in QST. KK7B started with the
     fact that the signals coming off a 40 meter dipole at night
     have a larger dynamic range than a CD recording, and used
     modern computer techniques to create a direct conversion

receiver that would receive such signals with no distortion, clipping or hum. It uses LC filters to set the audio bandpass (the filters have a 180 dB dynamic range - try matching that with op amp active filters!) and the same sort of complementary-symmetry output circuit you would see in a nice stereo amplifier.

The R2 receiver extends the R1 by adding a second mixer and phase shift networks to create a phasing single signal direct conversion receiver. Like a phasing SSB exciter in reverse - except that with modern components and computer analysis we can achieve 30-40 dB of stable, idiot-proof opposite sideband suppression with off-the-shelf 1% components.

The T2 exciter uses many of the same components as an R2 receiver to create a phasing SSB exciter.

The R1 is in QST, August 1992. The R2 is in the January 1993 issue, the T2 is in March 1993, and a final article tying things together in in the May 1993 issue. I'm typing these in from memory - please check before ordering back issues.

I (and many others) would kill for a kit, especially for the R2 and T2 which require some closely-matched (and large) capacitors and inductors. In the meantime I've scrounged enough locally for a first iteration of an R1, and am ordering some goodies from Digi-Key to upgrade the results.

73 from Burnaby,
laura VE7LDH

From ab4el.com Wed Jun 1 19:27:01 1994
From: g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV)
Subject: Re: R1 ???

In message <9404317703.AA770399765@mail.creo.bc.ca> lhalliday@creo.bc.ca writes:
>
>   Bob,
>
>
>   The R1 is in QST, August 1992. The R2 is in the January 1993
>   issue, the T2 is in March 1993, and a final article tying
>   things together in in the May 1993 issue. I'm typing these
>   in from memory - please check before ordering back issues.
>
>   I (and many others) would kill for a kit, especially for the
>   R2 and T2 which require some closely-matched (and large)

> capacitors and inductors. In the meantime I've scrounged
> enough locally for a first iteration of an R1, and am
> ordering some goodies from Digi-Key to upgrade the results.
>
> 73 from Burnaby,
> laura VE7LDH

THE GOOD NEWS IS THAT THERE IS A KIT FOR THE R1 AND R2 ON THE WAY

I AGREE ON ALL THAT HAS BEEN SAID ABOUT THE DESIGNS - THE ORIGINAL QST ARTICLE ON THE R2, IS, I BELIEVE, THE BEST AMATEUR RADIO ARTICLE I HAVE READ IN MANY YEARS.

WATCH THIS SPACE..... 73

George Dobbs G3RJV "It is vain to do with more,
G-QRP Club what can be done with less."
---------- William of Occam (1290-1350)

From ab4el.com Mon May 30 12:12:34 1994
From: lhalliday@creo.bc.ca
Subject: R1 update

Thanks to everybody who wrote privately about this.

The machine is complete back to the volume control, which is about 65% of the circuitry. I'm using a 10-by-15 cm PC board (4 by 6 inches, approximately), and it's far from crowded.

My first smoke test was when I had completed the output stage, back to the pot that sets the bias on the output transistors. I checked that the resistance across the power leads was somewhere between zero and infinity, observed a small variation when I twiddled the bias pot (a nice worm-drive one), and hooked the thing up to some headphones and a 9 volt battery to see what would happen. I like to use somewhat tired batteries for this, to keep the voltage down, and to limit their current capability. My 12 amp Astron supply could vapourise the whole thing in milliseconds if something went wrong...

The output stages came up with a soft thump, and when I cranked the input current up to 45 mA was able to brush my fingers across the inputs and hear appropriate noises in the headphones. Yahoo!

The next stage was the LM387 and the last filter, and this

was a mixed success. The input current jumped sharply (60
mA) and instead of a soft thump I got a sharp click when I
applied power. And couldn't hear any output. Since I may
have indeed goofed (the signal levels and impedances may
also be resistant to noise off one's fingers...) I'll set it
aside for the moment and start work on the mixer, input
diplexer, and so on. That's all that's left, anyway.

Further updates to follow.

73 from Burnaby,
laura VE7LDH/XL7LDH
             ^^^ special prefix to commemorate D-Day

From ab4el.com Thu Jun 9 10:43:08 1994
From: "Muenzler, Kevin" <MUENZLERK@uthscsa.edu>
Subject: re lat/long Bearings

>Anyone know of any software that would give you distances between
>two points when the Lat and Lon of both locations are plugged in???
>
>   Thanks es 73s de WA5OJI Evert
>
>
>
>   Evert R. Halbach   WA5OJI
>Internet - cs-erh@nich-nsunet.nich.edu
>Phone   - (504) 448-4999
>Snail   - P.O. Box 2168   Thibodaux, La. 70310

Everet,
     Any good calculus book would have the answer for you.
What you want is the length of the arc between the two polar
coordinates along a sphere. I don't remember the formula.
I have a routine in C that I can bring tomorrow. It also
will give you beam headings in degrees.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio.

Kevin R. Muenzler, WB5RUE   The University of Texas Health
muenzlerk@uthscsa.edu   Science Center at San Antonio,

From ab4el.com Sun Jun 5 01:42:59 1994
From: dh@deneb.csustan.edu (Doug Hendricks)
Subject: RE That's a lot of inductors!

Jeff, the term (8!) also is used to mean an exclamation point in expressing the fact that 8 is a lot of inductors. Good joke, also, the brochure was a copy of the one written by Wayne Burdick, N6KR, and I did credit him with writing the brochure!!!
72!!!!!!!!!!!!! Doug, KI6DS

From ab4el.com Tue Jun 7 12:43:17 1994
From: janderson@polycom.com
Subject: Re: Re: ATU?

Howie:

Thanks for the correction - you're correct (just goes to show that I shouldn't square things in my head!)!

Cheers,

Jeff, WA6AHL

From ab4el.com Fri Jun 3 11:32:18 1994
From: janderson@polycom.com
Subject: Re: Re: K5FO/6

Directions to the K5FO/6 soiree...

Place: "Two Guys from Italy" restaurant
Southwest Corner of El Camino & Grant Road
(shopping center w/Walgreens & Burger King)
Mountain View

Time: Tuesday, 7:00 PM +/-

Directions:

- If heading SOUTH on 101, take the Highway 85 exit. Then take the Grant Road/ El Camino North exit. Turn LEFT at the first light (El Camino & Grant). "Two Guys.." will be in the shopping complex on your RIGHT.

- If heading NORTH on 101, take the 237/Mountain View. exit. 237 becomes Grant Rd. The third light should be El Camino. Turn LEFT - and "Two Guys..." will be in the shopping complex on your RIGHT.

- If heading WEST on 237: Stay on it (it becomes Grant). At El Camino, turn LEFT. (see directions above).

- If heading North on 280: Take 85 North. Take the El Camino North Exit. Make a U-turn at the first light (Grant Road). "Two Guys..." will be in the shopping complex on your RIGHT.

From ab4el.com Mon Jun 6 11:13:17 1994
From: janderson@polycom.com
Subject: Re: Re: More VFO troubles (W1FB Design NB p. 111 again)

Stephen:

Your comment about the wrong frequency for the W1FB VFO rang a bell. Sometime ago I was looking into VFO designs, and in one of DeMaw's Notebooks I came across a VFO design with handy design guidelines, such as the typical reactance each cap should have at the vfo's operating frequency.

I thought this was great, until I compared it to a similar design in "Solid State Design for the Radio Amateur". In this book the recommended reactances were quite different than those that DeMaw recommended. I went back and checked DeMaw's guidelines and found that there was a problem - at resonance, the inductive reactance of the VFO's tuned circuit was nowhere near equal to its capacitive reactance! If someone tried to design a VFO with these guidelines, it would not resonate at the frequency for which it was designed.

I'm not sure in which of the Notebook's I saw this design, but it might pay to go back and check the parts' values of the design that you're using - at resonance the inductive reactance should equal the capacitive reactance. Also look into the VFO designs in "Solid State Design for..." - their numbers work out.

By the way, an EXCELLENT book is Chis Bowick's "RF Design", published by SAMS. Although it doesn't deal with more esoteric topics such as VFO or mixer design, this book is heads and shoulders above any other that I've read - check it out.

Have fun!

Jeff, WA6AHL

From ab4el.com Wed Jun 8 17:51:36 1994
From: janderson@polycom.com
Subject: Re: Re: power measurement

For a sine wave, Vrms is $\sqrt{2}$ Vpk ("peak voltage"), and Vpk is 1/2 Vpk-pk ("peak to peak" voltage). Which is what you figured....

John:

Careful! - I made the same mistake yesterday on this list...

Vrms = ((2**(1/2)) / 2) * Vpk, rather than (2**(1/2))*Vpk.
^^^
(note the divide by 2)

Stated another way, Vrms = 0.707 * Vpk, rather than 1.414 * Vpk (otherwise you'd have Vrms > Vpk !!).

And from this, Power = (Vp-p **2) / (8 * Rload), which is a useful calculation if taking measurements with a scope. (Someone else out there might want to check this to see if I've made a mistake).

Cheers from the bonehead,

- Jeff, WA6AHL

From ab4el.com Wed Jun 8 09:23:47 1994
From: JDuffy@aol.com
Subject: Re:Index Labs QRP+

In yesterday's edition, WB0GAZ wrote:

>Other:

>I called them and discovered it has no noise blanker (=no sale for >me)
>I did not ask about computer remote control (i.e., RS-232 port).
>I did not ask about shipping schedule. (lack of NB killed it >immediately for me)

I response to the above, I have the rig and have been using it for almost two weeks. A noise blanker would have been nice, but NOT having one has not been a problem. I have yet to have had a occasion to use an NB.

It does not have a remote computer control port, and I am not sure why you would want to have one in this type of rig. But to each his/her own.

Time to ship was about nine days, but they may have caught up by now.

This is the best QRP rig I have ever owned or used.

Duffy -- de -- WB8NUT

From ab4el.com Tue Jun 7 10:47:47 1994
From: btoback@netcom.com (Bruce Toback)
Subject: Renewal batteries

Just a note for anyone thinking of using Renewal batteries for Field Day (or for a field day): Buy the charger first. The charger includes coupons worth $1.50 off the price of the batteries. The manufacturer was doing this when the product was first announced, but I bought a charger yesterday and they're still including the coupons. The coupons have no expiration date, and one coupon is for $3 off the price of another charger.

-- Bruce Toback
KN6MN

From ab4el.com Thu Jun 2 19:04:52 1994
From: g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV)
Subject: Rick Campbell Boards

I have noticed some mail about the Rick Campbell R2/T2 Boards.
I have been informed that Bill Kelsey, N8ET, will be doing kits shortly.
So far no prices, date of release, etc. But those interested can contact Bill on email : n8et@delphi.com

I regard this is very exciting news as I still consider the articles by
Rick, in QST, the best amateur radio technical articles I have read in
many years.
Like others - I await further news with interest.
72/3
--

George Dobbs G3RJV   "It is vain to do with more,
G-QRP Club   what can be done with less."
-- William of Occam (1290-1350)

From ab4el.com Tue Jun 7 14:05:01 1994
From: Clark Fishman (FSAC-FCD) <cfishman@PICA.ARMY.MIL>
Subject: RLS135 diode

The RLS135 is a band switching diode made by Rolm.

It is about the same as a 1N914...cheap and works..it
is not a PIN.......I ordered 50 HP PINs from Penstock.

My two Icom 730's are going to be pinned

Clark Fishman   WA2UNN Cfishman@pica.army.mil

From ab4el.com Thu Jun 9 12:14:16 1994
From: Tom_Jennings <jennings@eng16.rochny.uspra.abb.com>
Subject: Saturday Morning QRP Net

Hi,

What time does the Saturday Morning QRP Net meet on 7040 kHz?

Thanks and 73.

TJ, kv2x
--

                                |
Thomas J. Jennings | Tel: (716) 273 7071
Development Engineer | Fax: (716) 273 7262
                                |
ABB Process Automation |
Post Office Box 22685 |
Rochester, New York 14692-2685 |
                                |

Internet: jennings@jennings.rochny.uspra.abb.com

From ab4el.com Fri Jun 10 11:10:35 1994
Subject: schematic/manual for Farnell power supply
From: "Vinod Narayanan" <vinod@watson.ibm.com>

I just acquired a FARNELL stabilized power supply,
model G12-20A, from a friend. (He had picked it up from a
"lab-dump" operation a while back, it was just sitting
around gathering dust..)

Just wondering if anyone has any specs/schematics sitting
around for this, so that I can get a copy. I will cover
usual costs, of course.

(If it works when I plug it, I probably won't need anything, but
you never know.)

--vinod
email: vinod@watson.ibm.com

From ab4el.com Sat Jun 4 22:25:17 1994
From: dh@deneb.csustan.edu (Doug Hendricks)
Subject: Sierra Brochure

Gang, I have been inundated with requests for the Sierra
Brochures. We are looking at a time problem, as the orders must
be postmarked by the 15th of June, so I am going to reproduce the
brochure here as best that I can. This is being posted for
information of the members of this forum, and is done so after
numerous requests.

The original brochure was written by Wayne Burdick, N6KR.

Announcing The NorCal Sierra QRP Transceiver
May 1, 1994

Ever since we began our first club project, the NorCal 40, some
NorCal members have been visualing a multiband backpacking rig.
Now, after the completion of three working prototypes, NorCal is
ready to begin a limited field-test run of the Sierra. We think
this is the most efficient multiband CW rig available, and we
know that NorCal members will really put it to the test!

The Sierra is a bit larger than the NorCal 40 and has the same

one board construction, but adds band modules that plug into the main board (see illustration). So far, we've built band modules for 160-15 meters, and maximum output power ranges from 2 to 4 watts. Band change is a snap thanks to quick release latches on either side of the box, and you can (with some ingenuity) store up to four extra band modules inside the top cover.

The Sierra was designed by Wayne Burdick, N6KR, with input from many NorCal members, especially Doug Hendricks and Bob Warmke. It is a step up from the NorCal 40 in many ways. The VFO covers about 150 kHz on each band, using a stable air variable capacitor with built in 8:1 reduction drive and calibrated dial. Transmit keying is shaped for reduced clicks. The receiver includes an IF amp, providing greater sensitivity and a much wider AGC range. Current drain on receive is still low at 30 mA (no signal). And there's plenty of audio, now, to drive a speaker directly. The Sierra also has lots of interior and front and back panel space available for additions of your own.

We'll have complete kits for the 80, 40, 30, 20, and 15 meter modules, as well as bare boards so you can build modules for the other bands. The manual will have parts lists and instructions for all bands.

At present there are no other accessories available (suggestions?) but we're thinking about a keyer/metering board, and a custom canvas bag with pockets for the Sierra, battery, keyer paddle, etc.

Disclaimer: The Sierra is a more complex design than the NorCal 40. As an example, note that there are eight (8!) u-wind-'em toroids per band module. First time builders and those without good test equipment may have difficulty getting the rig running correctly. However, if you do have trouble, we'll try to find a club member in your area to help you; after all, this is a club project!

Delivery: Due to difficulties in getting parts and finding unpaid laborers to put kits together - not to mention the fact that most of us have day jobs - NorCal can't guarantee a shipping date. But we're shooting for August.

If you'd like to tacke the Sierra, fill out and mail the order form below.

The order form also includes a short member survey; please fill out this part of the form whether or not you're ordering the Sierra. This is a good chance for us to take the pulse of

NorCal, which has grown much faster than anyone expected. We'll publish the survey results in a future issue of QRPp.

[End of first page of original brochure.]

Sierra Order Form: This offer is for NorCal QRP Club members only; limit one (1) Sierra kit per member. All prices include shipping in the U.S. Some of you may want to enhance your Sierra at a later date, so we will probably offer band module kits and other accessories on a continuing basis. To place these subsequent orders, call Jim Cates at 1-916-487-3580. All initial orderes must use this form and must be postmarked by June 15, 1994.

Sierra Transceiver Kit only (no band modules), $160	_____
80 Meter band module kit, $25	_____
40 Meter band module kit, $25	_____
30 Meter band module kit, $25	_____
20 Meter band module kit, $25	_____
15 Meter band module kit, $25	_____
Band module PCB only, $7 ea. x _____ =	_____
Subtotal:	_____
Calif. Residents add 7.75% sales tax	_____
Foreign Orders add $10 postage	_____
Total (enclose check payable to Jim Cates)	_____

Mail Check and Order form to:

Jim Cates,
3241 Eastwood Road
Sacramento, CA 95821

Name:_____

Address:_____

City:_____ State:_____ Zip: _____

Phone:_____

Note: If you are not a current member of NorCal QRP Club, you can become one by applying for membership. Send your name, call and address to Jim Cates at the address above. If you would like a subscription to the journal of the club, QRPp, send an additional $5. QRPp is published quarterly in March, June, September and December and has 72 pages of pure QRP info in it with NO paid advertising.

Ok guys, that is it for the brochure. Note that NorCal refers to the NorCal QRP Club, which is an association of QRP enthusiasts and is NOT a COMMERCIAL VENTURE. This kit is being offered as a club project to club members only to enhance the enjoyment of the hobby, QRP operating, and to encourage experimentation and homebrewing among our members. This posting on the internet is done in response to many requests for it. 72, Doug, KI6DS

From ab4el.com Sat Jun 11 01:05:42 1994
From: Tom Kerns <tkerns@seaccd.ctc.edu>
Subject: Solder-It Butane solderer

Folx -

I just purchased a "Solder-It" brand refillable butane soldering pencil. I got it from the manufacturer (I think) at the hamfest in Seaside, OR last weekend. Now I'm having a hard time making it work, so I'm wondering if anyone on this list has ever used one. Here are the problems that are happening:

1. I don't think it is filling very fully. I'm refilling it with the refined butane can that the fellow sold at the hamfest, so it's gotta be ok stuff. It seems to fill awfully fast, and start to overflow, so I stop filling. But it doesn't seem to last more than maybe 10 minutes.
2. Also, it is *very* difficult to light. I start with a fairly low flow, just like the directions say, but it often doesn't catch, or it goes out easily. This does not seem right.
3. Is it true with butane solderers that you can't really use them when there is even a very *mild* breeze outside? They get blown out very easily? This one has two heads: one is a regular point for doing regular solder. The other is an open flame, very directed, for working with their solder paste (which they promise is extremely conductive and extremely strong). The open flame head goes out very easily.

Now this is the first butane soldering unit I've ever used, so I might just not understand how they work, but I've used plenty of other gas type devices, so I have a *little* experience.

Any ideas? Could it just be a defective unit?

- Tom AA7ZG

Dr Tom Kerns, Professor of Philosophy
North Seattle Community College
9600 College Way North
Seattle, WA 98103
email: tkerns@seaccd.ctc.edu
voice/voicemail: (206) 528-3827
FAX: (206) 527-3734
Amateur radio callsign: AA7ZG
Packet: AA7ZG @N7DUO.WA.USA.NA

Fly Fishing is The Answer.

From ab4el.com Tue May 31 13:04:41 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: Sprint

Gang,

The QRP ARCI Sprint was Sunday from 2000-2400 LOCAL time.

If you remember, I promised a run for the money. Well, Saturday, I mowed the acre by pushing a mower around it for 5 hrs, about 6 miles I figure. Good exercise, but I don't recommend it for everyone. :-)

Since, I was already dirty, I decided to do something that I had wanted to do for some time. I took down the 80M long wire. I put back up, in the same direction, a 40M long wire. This to test over the next year how much difference there is between the two. Not a real scientific test, but it's real.

So, I cleared the social calendar for Sunday night (she went to OK for family reunion anyway) :-) Well, sorry to say the weather did not cooperate at all. Starting about 6 or 7 local time, we went into a tornado watch until 3 am on monday. I

unplugged the shorting wire from the 450 ohm twinlead and WOW!!

Three inch sparks. Thanks but no thanks. Think I'll sit this one out. I tried every hour to see if I could work on the antenna, but no luck. The MFJ tuner would ark inside. Gotta take it apart to check for any damage later to day.

So, didn't get to work anyone on the new NN1G rig for 40M. Review in latest K5FO newsletter. :-) To follow on net later next week from CA.

Let's get a notation going: I'll start and we'll agree or disagree as follows---

NN1G Mark 1 --- the original NN1G as written up in Jan 1993 QQ

NN1G Mark 2 --- the modified NN1G in Jan 1994 QQ with larger IF cans

NN1G Mark 3 --- a.k.a. NE-QRP 40-40 and 30-4 kits as sold by NN1G

The Mark 2 is sold by Dan's Small Part's and Kits, 1935 S. 3RD W., #1, Missoula, MT 59801 (406) 543-2872 Cost is $59.95 and $3.95 for shipping. I may be off a little on the shipping.

The Mark 3 is sold directly by Dave Benson, NN1G, for $40 plus $1.95 for shipping. See archive for information and details.

I will post a more detailed analysis and comparison week. This week is filled scrambling to get to San Jose again on sunday for one week. Those of you who missed me last trip, let's plan now and get it locked down. Dinner at Two Guys from Italy. Bring a rig. I'll bring the new rig, NN1G Mark 3. Sched available on 40M also this week and next.

Guess I better add this. The Mark 3 is varactor tuned, does not have case, pots, and connectors. I'll let you know on the drift, but it seems to do well so far. Not silk screened, but that is not an issue with me. It forces me to be more careful and makes it more homebrew. (:-)

Bob Gobrick, I received your UPS package just now. I'll have the rig up and fixed and back on to you tomorrow.

dit dit

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Tue Jun 7 07:52:44 1994
From: jean@canada.lsil.com (Jean H. Theoret)
Subject: Super Keyer

Hi there!

'just figured I would get a more accurate response from this list
rather than posting to rec.radio.amateur.misc and waiting eons
for someone to lay eyes on my questions...

This being said, would anybody know if the Super Keyer kit is
still available from Idiom Press. I sent them a written inquiry
some time ago and did not receive any answer.

All further critic and comments regarding that keyer are also
welcome! Thanks!

Jean H. Theoret, B.Eng
ASIC Design Engineer
E-Mail: jean@canada.lsil.com

LSI LOGIC
LSI Logic Corporation of Canada, Inc.
A job to 'die' for!
"Carpe Diem", Horacio (Odes, I, 11:8)

From ab4el.com Wed Jun 8 13:09:32 1994
From: Charles Furnweger <CHARLES@asic.mtv.nec.com>
Subject: RE: Super Keyer

> Hi All!
>
> Regarding whether or not Idiom Press is still around, I think they
> are still in business. A couple of months ago I sent them a letter.
> Since they are a small company, maybe even a one-man show, I enclosed
> a self-addressed, stamped envelope and received an immediate reply
> from them. So, I guess they are still around.
>
> About 9-months ago, I purchased their CMOS Super Keyer kit. It went
> together very easily even though there are no construction instuctions,
> except for the board layout and schematic. They do include a very
> extensive (and excellant) reference manual and tutorial on the use
> of keyer.
>
> I am very impressed with the unit. I like the idea of being able to
> change the setups for the keyer through the use of commands given
> with the paddle. I especially like being able to change the

speed this way. This eliminates the need for a pot for the speed control. I actually have a pot on my unit, but if I were to build it again, I would not install the pot.

At one point, I wanted to install the keyer into a QRP rig, but I was cautioned against this. The reason is the possibility of the clock for the microprocessor causing interference in the rig unless it is well shielded. I haven't tried it so I don't know if the clock is at a frequency that would cause a problem or if the radiated level coming from the clock oscillator is high enough to cause problems.

Hope this helps......

73.....
Charles
WB4OWL

From ab4el.com Thu Jun 9 11:54:59 1994
From: Robert Cutter <bcutter@teal.csn.org>
Subject: RE: Super Keyer

On Wed, 8 Jun 1994, Charles Furnweger wrote:

> Hi All!
>
> Regarding whether or not Idiom Press is still around, I think they
> are still in business. A couple of months ago I sent them a letter.
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> build it again, I would not install the pot.
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>   cautioned against this. The reason is the possibility of the clock
>   for the microprocessor causing interference in the rig unless it is
>   well shielded. I haven't tried it so I don't know if the clock is at
>   a frequency that would cause a problem or if the radiated level
>   coming from the clock oscillator is high enough to cause problems.
>
>
>   Hope this helps......
>
>   73.....
>   Charles
>   WB4OWL
>

I installed a Super Keyer in a HW-9 several years ago with no problems. I mounted the switches on the top of the cabinet and also AA batteries to supply it inside. It has survived several Field Days and the battery life is forever. 72, Bob KI0G

From ab4el.com Fri Jun 10 12:49:59 1994
Subject: SuperKeyer II RFI
From: tavan@tss.com

Per recent comments by WB4OWL and KI0G:

I installed a Super CMOS II in an A&A Engineering K9AY 20m xcvr and got a pretty bad whistle at about 14.035. It goes away when the CPU shuts down, about 2 seconds after I stop sending. If anyone has solved this problem, please post the answer!

73,

/Rick N6XI
rick@tss.com

From ab4el.com Fri Jun 10 10:26:34 1994
From: okas_rp%ncsd.dnet@gte.com
Subject: SWR problems

Bob, N2IPY, writes:

>The problem:
>SWR into a dummy load is not the 1:1 that I expected.

>The dummy load is a 50 ohm, 10 watt ceramic resistor, one about 2 in long
>with a square cross-section.

>FWD power reading is about 4.5 watts, as expected. REV power reading is
>about 1 watt. I expected near zero into a dummy load. Is something wrong
>here, other than my expectations?   :-) Maybe that resistor isn't pure
>resistance? Ideas?

Bob, you hit the nail on the head, to use that old, worn out cliche. Unless you're *positive* that resistor is non-inductively wound, I strongly suspect your dummy load has a reactive component at the RF frequency you're pumping into it. The square ceramic power resistor you describe is made of resistance wire wound around a ceramic core with leads attached at the ends. This whole affair is then encapsulated in a ceramic case. So in other words, it looks like an inductor to rf.

The Solution:

Buy some carbon composition resitors (inherently non-inductive) and parallel a number of them to get to 50 Ohms. Alternatively, check out suppliers like DigiKey who sell resistors that are specified as being non-inductive.

Bob - N3MBY

From ab4el.com Sat Jun 4 19:36:00 1994
From: B61395@awtims.fe.anlw.anl.gov
Subject: T-Kit All-Band RX

Hi Gang. Anybody built their T-Kit "All-Band" Receiver yet??? What do yo (darn) you think of it??? I just ordered one, but they couldn't really tell me when it would ship. I plan to build it for 160 to use with my HB transmitter. Also ordered the keyer board to use for a portable/QRP keyer. Anybody got any insight into how long it is taking TT to ship the kits???

73, Bill, KR8L/7 (DN43), M-98, NWQ-127, NorCal-454, AMSAT-8735

From ab4el.com Fri Jun 10 22:13:10 1994
From: BHOWLE@delphi.com
Subject: T-Kits Arrived !

The two kits that I ordered form Ten-Tec about six weeks ago arrived this week. I ordered the audio amp. (1.5 w.) to give the audio level of ny MFJ-9020 a boost and also the econo-keyer that I may end up using in a yet to be built OHR Sprint.

IMHO, PC Boards, components, and silk screen work are good. Do wish Ten-Tec could have offered a masked PCB - the last OHR project spoiled me. Instructions were adequate for first time kit builders, but if this is indeed a first kit then it might be necessary to get an experienced hand to do a little instruction in the finer points of soldering.

A new catalog arrived with the two kits - I noticed that several items that appeared in the first edition of the T-Kit Catalog didn't reappear in the second edition.

One interesting kit for the QRP crowd is a 20m. to 6m. transverter that requires 3 - 5 watts of drive sor around 8 watts out on 6 m.

requires 3 - 5 watts of drive for around 8 watts out on 6 m.

Bob - WA4ZID

From ab4el.com Tue Jun 7 09:13:24 1994
Subject: Ten-Tec direct conversion kit -- getting on frequency
From: "Vinod Narayanan" <vinod@watson.ibm.com>

I recently got the Ten-Tec direct conversion receiver (kit #1056), and put it together for 80m. (The kit comes with parts for all the different bands). My intention was to use it for receiving W1AW code practice. After I put the kit together, I was able to receive various signals, but mostly seemed to be digital modes, and perhaps couple of beacons, but no W1WA.

After checking that I had used all the component values they specified for the frequency determining circuits, yesterday I went over to a friends house, to check it out with an oscilloscope. After playing around with all the adjustments they specified, we found that the lowest we could go was about 3.8MHz, and the highest was about 4.3MHz. No wonder I could not get W1AW, which is at 3.5815 or so..[The specs say that the 80m module should get me between

3.5 and 4.0MHz].

Now, I am new to this stuff..so, if you can tell me what I should try to get this fixed, I would appreciate it very much. Please let me know what other information I can give, in order for you to be able to help. The receiver uses an NEC612AN mixer-oscillator (similar to NE602 according to the documentation).

Here is what I plan to try:
1. Resolder all the frequency determining components.

2. Try changing (ie increasing the capacitance) of the circuit which determines the local osciallator frequency. (Currently C3=150p, C4=150pf, L2=8.0uH, L3=8.2uH, C3 connected between pins 6 and 7, C4 connected from pin 7 to gnd, and L2 and L3 connected in series from pin 6 to Gnd through a 0.1pf capacitaor, and a varactor tuning circuit connected to the top of L2 ie aafter the 0.1pf cap).

3. Any other suggestions?

Many thanks in advance for any help, advice you can offer.

--vinod
email: vinod@watson.ibm.com

From ab4el.com Fri Jun 10 01:14:20 1994
From: Bruce Walker <bruce@Think.COM>
Subject: test 3

this is test 3.

From ab4el.com Fri Jun 10 01:26:13 1994
From: Bruce Walker <bruce@Think.COM>
Subject: test 4

test 4

From ab4el.com Fri Jun 10 01:36:02 1994
From: Bruce Walker <bruce@Think.COM>
Subject: test 5

test 5

From ab4el.com Fri Jun 10 01:38:55 1994
From: Bruce Walker <bruce@Think.COM>

Subject: test 6

test 6

From ab4el.com Fri Jun 10 00:03:45 1994
From: Bruce Walker <bruce@Think.COM>
Subject: Testing

Sorry to bother y'all, but I'm testing a new version of majordomo on the
list. Please ignore. --bruce WT1M

From ab4el.com Fri Jun 10 00:56:29 1994
From: Bruce Walker <bruce@Think.COM>
Subject: testing

testing again 2.

From ab4el.com Thu Jun 2 18:17:36 1994
From: JimN0OCT@aol.com
Subject: Thanks for favorite circuits....

Thanks to all who responded to my request for favorite qrp circuit
projects--got some great ideas and plans. Anyone who has interest along
these lines and hasn't perused the CWRU files mentioned here by Stephen Trier
KG8IH should check them out--they are an interesting diversion from the tried
and true circuits of Hayward, DeMaw, Lewallen, etc.

Again, Thanks to all!!

72 (+/- 1) Jim N0OCT
jimn0oct@aol.com

From ab4el.com Sun Jun 5 08:43:40 1994
From: James Speer <F_SPEERJR@CCSVAX.SFASU.EDU>
Subject: Re: That's a lot of inductors

>72!!!!!!!!!!!!!   Doug, KI6DS

let's see: (72*71*70....)*[(72*71*70....)-1]*...

hmmm

From ab4el.com Sun Jun 5 01:06:40 1994

From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: That's a lot of inductors!

Doug, KI6DS, in talking about the Sierra said there are:

> (8!) u-wind-'em toroids per band module.

Holy cow, Doug! My gosh, 8! = 8*7*6*5*4*3*2*1 = 40,320 toroids per band.
It would take me a lifetime to gather up that many cardboard coil forms
(even with all the restrooms on campus...)

Oh, for those of you who've forgotten, N! (read N factorial) is the product
of all natural numbers less than and including N.

Jeff NH6IL

From ab4el.com Tue Jun 7 15:21:53 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: The Right Sideband

Hi Gang,

        Not to raise an old ghost but I came across some rather interesting
information which may mean that for most of us homebrewers, LSB is the right
side-band. The reason is due to the fact that most of our receivers employ
half-lattice crystal ladder filters which are predisposed towards the LSB.

        I hear a KF... on 20M... more later.

72,
Daniel
--

+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+--------------------------------------+

From ab4el.com Thu Jun 2 13:13:26 1994
From: Roger Traylor <rlt@SSD.intel.com>
Subject: The Wireman.... found

Gang,
     If anybody else is interested, "The Wireman's" phone number is:
     1-800-727-9473. They will send you their catalog for $2. They
     will let you put the $2 on a credit card too. Nice folks.

Thanks to:
Gary M Diana <gnd@adm01.rfc.comm.harris.com>
Jeff Anderson <janderson@ploycom.com>
Gene Brignam <brigman@kc4sa.marine.geol.scarolina.edu>
(Gene, I couldn't reach you via the above address.)

Roger Traylow WB4TPW
rlt@ssd.intel.com

From ab4el.com Wed Jun 8 09:03:21 1994
From: penc@psuh02meteo.psu.edu
Subject: Tnx fer Norcal Info

Thanks to the several people who answered my request for info on Partial NorCal 40 kits. Needless to say, the check is in the mail. I appreciate the info provided by Doug, KI6DS, Tom KV2X, Alan W6RCL and Steve WW7Y. This group is great when it comes to getting info like this or technical help. Keep up the good work.

de WK2A
Richard Penc

From ab4el.com Mon Jun 6 08:32:13 1994
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)
Subject: Toroid colors

Just a note to add to the recent dialog on the Internet QRP forum about winding cores. Someone mentioned difficulty in finding cores in Hawaii, and I believe he said a dealer there had a box full of mixed cores of all sorts (mongrels, apparently) with it being up to the purchaser to figure out what's what.

Just a reminder to never trust the color code on a core unless you positively KNOW who made it or know where it came from. I went into this in some detail in the Idea Exchange in the QRP Quarterly a while back, and QST had my letter on the subject in Technical Correspondence in the March 94 issue. The short answer is that there is NO standard color code among makers of ferromagnetic cores, either powdered iron or ferrite. I know this from detailed study of a number of manufacturers brochures.

A good example would be a red core. We "know" that's a type 2 powdered iron, with permeability of 10, and good for HF tuned circuits. Unfortunately, we don't know who put that red color on there. Depending on who made it, that red core could be what we think or it could be a ferrite core, and might have permeability of

850, 1800 or 10,000! Yellow is "supposed" to be the nice, friendly type 6 material, permeability of 8, but it could also be ferrite, with permeability of 10,000. White "is" type 7, with permeability of 9, I believe, and the lowest temperature coefficient of the powdered irons and best for stable VFOs. But if someone other than Micrometals made it, a white core could be a ferrite with permeability of 750 or 5000.

Some folks make all their cores the same color--"natural ferrite", which is no coating at all. Some make their entire line of cores available in any color the customer wants, while another uses a total of 3 colors for the entire line. The powdered iron color code that we know and love is actually the code of Micrometals; Arnold Engineering uses the same code, to some extent, although some of their products depart from it. The most common source of toroids for ham use seems to be Amidon Associates, and they get their powdered irons from Micrometals. Palomar is another source. Since most of us get cores from a very few sources, all of which appear to get their cores from the same manufacturer, we all "know" a color code which we assume is universal. It is not!

Imagine picking up a resistor and seeing color bands of brown, black, red and silver. We'd like to think it's 1000 ohms, 10% tolerance, but it could be 100K, 27K, 47, or 5.6 megohm, with a tolerance of anywhere from 1% to 20%. That's essentially the situation with ferromagnetic core colors. The bottom line is to be very, very careful of cores you may see at a hamfest or surplus store, even when they have signs on them purporting to be the true identity. Does the dealer really know where they came from, or is he making the same assumptions about colors that you are? (By the way, aside from the uncertainty of the colors, the cores I usually see at hamfests are rarely a bargain anyhow, even if they really are what the sign says!)

Your best bet is to stick with known, trusted sources such as Amidon, Palomar, Danny Stevig (KA7QJY, Dans Small Parts and Kits), Oak Hills Research and the other well known QRP parts sources. (I have no connection with any of these, aside from being an occasional customer of some; this is not intended as an indorsement of any of them.)

DE WA8MCQ@WB3V.MD packet
WA8MCQ%hambbs@wb3ffv.MD Internet
5 June 1994

--
Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Mon Jun 6 19:10:37 1994
Subject: Re: Toroid colors
From: mjsilva@ted.win.net (Michael Silva)

>Just a note to add to the recent dialog on the Internet QRP forum
>about winding cores. Someone mentioned difficulty in finding cores
>in Hawaii, and I believe he said a dealer there had a box full of
>mixed cores of all sorts (mongrels, apparently) with it being up to
>the purchaser to figure out what's what.
>
>Just a reminder to never trust the color code on a core unless you
>positively KNOW who made it or know where it came from.

So true! There are LOTS of switching-supply ferrite toroids out there marked with "wrong" colors (I know, I own some!). Nowadays when I am toroid-hunting I take along a length of wire and my inductance meter. I'll wind 5 or 10 turns on a core and compare the inductance with a little card I made up for the standard types I'm interested in. It's not terribly accurate, but it doesn't have to be to differentiate between e.g. a permeability of 10 and one of 1000. If you have a portable freq. counter you could wire up an oscillator run off a 9v battery and check cores that way. Just put some values on a piece of paper so you're not trying to do inductance and turns calculations while the seller watches intently. Truth to tell, I use a spreadsheet. And, no, I havent' saved enough money to make it financially worth while, but that's not the real point, is it?

Mike, KK6GM

From ab4el.com Tue Jun 7 11:00:54 1994
Subject: Re: Toroid colors
From: rehm@zso.dec.com

Mike,

> Just put some values on a piece of
> paper so you're not trying to do inductance and turns calculations
> while the seller watches intently. Truth to tell, I use a spreadsheet.

Can you post your spreadsheet in .XLS, SYLK (.SLK), or even ASCII format? Besides being useful for other geeks who would be brave enough to wander laptop in hand as we "mine" various torid collections,

it would be educational!

What a great use of the qrp list that would be..

/eric

From ab4el.com Thu Jun 2 19:00:33 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: toroids

I know the using toroids gives an inductor a higher Q value, and the other benefits are that the field is completely self-contained and fewer winds are necessary as compared to an airwound inductor, BUT will there be any on-the-air difference in performance to be noticed between toroidal wound and air-core inductors?

Jeff NH6IL

From ab4el.com Sun Jun 5 12:21:58 1994
From: "W. Daniel" <pandora!daniel@Think.COM>
Subject: Transistor substitution

Hi Gang,

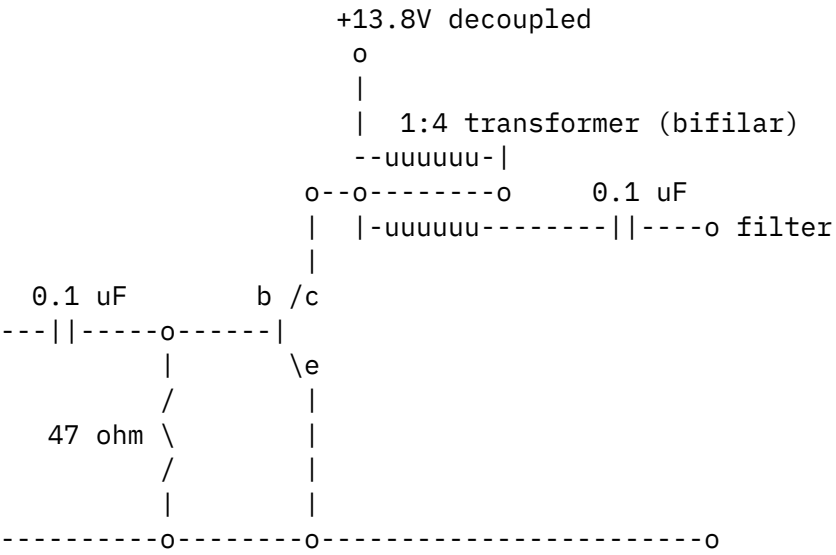
Can anyone give me a quick analysis of substituting a 2SC2075 with an MRF476 or 2SC1678? Here are the specs I know of. I would like to know what to expect in the long run.

	2SC2075	MRF476	2SC1678
Uceo	80V	36V	65V
Current	4A	1A	3A
PEP	>3.5W	3W	>3W
Typical f	27MHz	27MHz	27MHz

I am afraid I do not have the gain figures but lets just assume that the gain is close enough for us to ignore. The application runs off a 13.8 volt supply rail and should deliver up to 9 or 10 watts off the power meter. My reasoning is that since the output of final PAs can rise to twice the supply rail, ie. 27.6V, all three transistors are safe to operate as far as that is concerned, except for really bad SWR conditions, perhaps the MRF476 is a poorer choice. As far as current handling goes, assuming an output power of 10 watts and efficiency of about 60 percent plus some margin, I'd say about 20 watts on the transistor during operation, giving a operating current of less than 1A, in which case the 2SC2075 and the 2SC1678 should be a reasonable choice.

Here's why I am wondering, I want to replace a 2SC2075 and have a bunch of 2SC1678 and was wondering if under the given conditions, the 2SC1678 will do? The MRF476 is provided as a point for comparison as the 2SC1678 actually works well as a MRF476 substitute. BTW the 2SC1678 already works when plugged into the 2SC2075 slot but don't tell me to leave it there and see what happens as I am quite paranoid. Besides I think, as the MRF476 is such a popular device, people should be familiar with it and would like to know about possible substitutes too, not me though. What I'd like to know is what would happen as the limits of the circuit is approached? Would the margins of the transistors be sufficient? If operational differences could be analyzed I'd be even more glad.

Can some one reply? The final PA operates in Class C unbiased operation.



A fairly standard circuit as you can see, please advise. Tks.

73,
Daniel

p.s. My transistor specs are sparse at best so if you have a better source saying something different please feel free to use that. I have some specs for the MRF476 but did not use it because I did not have a similar spec for the other 2 transistors, so in order to preserve consistency (comparing apples with apples), I provided only these data from the same source.

--

+-------------+--------------------------------------+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more

| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-------------+-------------------------------------+

From ab4el.com Mon May 30 07:03:48 1994
From: ATXR@CENVMC.CENCOL.ON.CA
Subject: transportable antenna

From: Ted Rosen, Architectural Technology Department
Thanks to all who responded to my request on transportable antennas.
There is also a good article in the June 94 QST, p68-69. I will
let you know when I get the antenna working.
73 de Ted, VA3TAR

From ab4el.com Wed Jun 8 13:52:48 1994
From: teda@meaddata.com (Ted Albert)
Subject: Universal QRP transmitter design questions

Since getting pumped-up by George Dobb's presentation at Dayton this year, I purchased Solid State Design and lots of parts. I have spent the past month reading Solid State Design and The ARRL Electronic Data Book. I have been working with the schematic of the universal QRP transmitter on page 26 of Solid State Design, verifying the math for the part values. I created a spreadsheet to evaluate the component values listed in Table 1 on the same page for the pi-network. Now the problem, the spreadsheet and the table don't agree. I then plugged the formulas into my HP programmable calculator and got the same answers as the spreadsheet. Now its time to ask for some help.

Possibilities for the discrepancies:

1. The part values where chosen as close in value as possible from available suppliers.

2. The constant for Q is not unity. The text states that the network presents 50 ohms to the collector of the final and the antenna load is 50 ohms. Given Q of 1, the formulas aren't really needed, XC3=50 ohms, XC4=50 ohms, and XL3=50 ohms.

3. I'm not using the correct formulas?

4. None of the above?

The formulas for evaluating the pi-network were taken from the example on page 53 of Solid State Design. I worked the example in figure 1 on page 52 correctly using the formulas and then plugging XC3, XC4 and XL3 into the formulas for determining the component values in mfd and mh from The Data book. The example in figure 1 used a frequency of 7 Mhz and a design Q of 3.

I used the inductance of Toroidal Coils on page 250 of Solid State Design to determine the value of the L3 coil in table 1. I suspect I'm not using this formula correctly because it doesn't take into account the gauge of the wire used for the coil, or does it?

Any and all help greatly appreciated.

73 de Ted, KF8EE

From ab4el.com Thu Jun 9 13:07:51 1994
Subject: Re: Universal QRP transmitter design questions
From: mjsilva@ted.win.net (Michael Silva)

>Since getting pumped-up by George Dobb's presentation at Dayton this year, I
>purchased Solid State Design and lots of parts. I have spent the past month
>reading Solid State Design and The ARRL Electronic Data Book. I have been
>working with the schematic of the universal QRP transmitter on page 26 of
>Solid State Design, verifying the math for the part values. I created a
>spreadsheet to evaluate the component values listed in Table 1 on the same
>page for the pi-network. Now the problem, the spreadsheet and the table don't
>agree. I then plugged the formulas into my HP programmable calculator and got
>the same answers as the spreadsheet. Now its time to ask for some help.

After first plugging in the wrong inductance and getting impossible results (L1 instead of L3), I got values of around 55 ohms Xc and 45 ohms Xl, depending on the band. Is this the discrepency that's bothering you? If so, maybe I can answer with a bit of handwaving (this stuff is not my specialty). Looking at Xc and Xl, the resonant frequency of the network is a bit higher than the operating frequency (about 10%, it looks like). This is where the low-pass "knee" begins (3db point), and where the network starts attenuating harmonics, which is just about where we'd want the knee to be, to allow for parts variations. I think this is just a bit of a deceptive "special case" pi-network, since there is no impedance transformation happening, only LP filtering.
>
>I used the inductance of Toroidal Coils on page 250 of Solid State Design to
>determine the value of the L3 coil in table 1. I suspect I'm not using this
>formula correctly because it doesn't take into account the gauge of the wire
>used for the coil, or does it?

The formula is correct, and it doesn't depend on the wire gauge, at least not to any precision we care about.

73,

Mike, KK6GM

From ab4el.com Wed Jun 8 00:53:35 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: VFO troubles solved! (W1FB Des. NB p111)

I heard a signal! I managed to receive a carrier tonight on the "page 111" receiver. The cure to the VFO frequency blues was a buffer stage. I now see full drive into the mixer with no VFO pull.

The buffer design is taken from the Ugly Weekender with minor adaptations. The test signal came from the quick-and-dirty crystal oscillator I have been using as a frequency reference.

The bad news is two-fold: First, I have to put almost 1V pk-pk into the receiver in order to hear much of anything, and second, the tuning capacitor is very sensitive to objects around it. The easiest way to tune around is to wave my hand in the air about 6 inches from the rig.

I'm not sure what to do about problem 1, but I think I'll start by working on the deafening power-supply noise in the audio amp. Cleaning that up should go a long way toward improving what I can hear.

Problem 2 is more of a mystery to me. I suppose this would go away if the radio were in a box? Are there any quick ways to reduce the effects of hand capacitance?

Thank you all for the help! I never could have gotten this far without you all.

Stephen

From ab4el.com Wed Jun 8 09:35:59 1994
Subject: Re: VFO troubles solved! (W1FB Des. NB p111)
From: "John F. Woods" <jfw@ksr.com>

> I heard a signal! I managed to receive a carrier tonight on the "page
> 111" receiver. The cure to the VFO frequency blues was a buffer stage.
> I now see full drive into the mixer with no VFO pull.

I brought in all three W1FB xxx Notebooks, since I couldn't remember which one you specified, and now I have the circuit in front of me.

> The bad news is two-fold: First, I have to put almost 1V pk-pk into
> the receiver in order to hear much of anything, and second, the tuning
> capacitor is very sensitive to objects around it. The easiest way to
> tune around is to wave my hand in the air about 6 inches from the rig.
> I'm not sure what to do about problem 1, but I think I'll start by
> working on the deafening power-supply noise in the audio amp. Cleaning
> that up should go a long way toward improving what I can hear.

Cleaning up the power-supply noise will help a lot, but it still won't be
enough -- note that on page 112 he says that "two or more identical stages
of amplification are necessary in order to ensure adequate weak-signal
reception." You can take the uA741 IC amplifier from the circuit on page 113;
use high-impedance headphones if you have them. (Or use the ubiquitous LM386.)

For the capacitor, you want to do two things: first, make sure that the frame
of the capacitor is at the ground potential of the circuit; second, enclose it
in a box. You could also operate the rig with your finger on the ground point
(so that you're at the same potential as the capacitor frame), but that's a
bit inconvenient ;-).

From ab4el.com Wed Jun 8 20:18:54 1994
From: Stephen Trier <sct@po.cwru.edu>
Subject: Re: VFO troubles solved! (W1FB Des. NB p111)

> Cleaning up the power-supply noise will help a lot, but it still won't be
> enough -- note that on page 112 he says that "two or more identical stages
> of amplification are necessary in order to ensure adequate weak-signal
> reception."

I did that already, thanks. I'm using the transistor amp he describes for
the first stage, a 741 biased for single-supply operation for the second,
and an LM386 for the third.

I need to reverse the capacitor wiring (I had the rotor at RF), clean up
the power supply, and see if I can find a box for the thing.

Stephen

From ab4el.com Wed Jun 8 03:56:13 1994
From: dh@deneb.csustan.edu (Doug Hendricks)
Subject: WestCoast QRP Inet

The meeting of the Internet QRP forum at Two Guys from Italy was a blast.
We had 8 hams there, Chuck Adams, Jeff Anderson, Eric Swartz, Charles
Furnweger, Wayne Burdick, Bruce Florip, Stan Goldstein and me,

Doug Hendricks. It was a great time. We ate some really good Italian food, and then we talked QRP for 2 and 1/2 hours. There were several rigs there, Wayne had the Sierra, Chuck had a 40-40 (and yes I can attest that a PhD can solder, it was a work of art), Bruce had a NorCal 40 with a super paint job plus a simple 40 meter crystal controlled transmitter that is a kit, but he couldn't remember who puts it out, Charles had a RadioKit 30 meter rig that is about 70% finished, and I had the Epiphyte SSB rig, plus the 30-40 and the 40-40 New England rigs.

The conversation was wonderful. It was neat to just sit there and listen to all of that brain power being exchanged. Several times Chuck and I would listen, and then look at each other and just grin. It was fantastic. We heard all kinds of ideas for new projects, the Sierra schematic was gone over with a fine toothed comb, and we heard from Stan how he has worked 71 yes seventy one countries with his NorCal 40!!

Wayne talked about how he prototypes a rig and what he goes through to design a rig. Some of you may be interested to know that he has spent about $1000 to prototype the 3 Sierra rigs. He told us that the parts for the Sierra will run about $120 to $125, and that is buying in 100 quantities. If you prorate the expense of the prototype rigs which is a legitimate cost, then you have to add another $10 to the cost of the rig (assuming a run of 100) so now you are at $135, and you have to mail and package the kits. That is why the cost of the basic radio is $160 which we think is very reasonable.

Will there be a partial kit of the Sierra? Maybe, but not for several months, and there is no guarantee that it will happen.

Chuck handed out copies of the Number 1, Issue 1 of the K5FO newsletter. Number 2 is at the printer and Chuck says it will mail next week. I thoroughly enjoyed myself, and I would encourage others to plan similar events in your local area. Get to know the guys on the net, it is FUN. 72, Doug
KI6DS

From ab4el.com Tue Jun 7 12:57:17 1994
Subject: What are RLS135 diodes?
From: Eric Swartz WA6HHQ <erics@cruzio.com>

To the QRP bunch:

I'm interested in improving the front end intermod response in my kenwood HF rig. Communications Quarterly had an excellent article by WB3JZO describing the use of PIN diodes instead of regular PN junction diodes for switching front end receiver filters. He claimed a 6-8 db improvement in spurious free dynamic range and an improvement in received signal 'quality' when he replaced the PN type diodes in several commercial ham rigs with HP PIN diodes.

My question is: What type of diodes are the RLS-135 diodes found in Kenwood HF rigs? Are they simple PN types, or are they already PIN diodes? Also, who

makes the RLS-135's? (most likely a Japanese Co.)

Has anyone alse tried this mod? If so, what were your results?

Thanks in advance!   Eric, WA6HHQ

--

From ab4el.com Sat May 28 07:57:19 1994
From: WEBSTER_KER@CSUSYS.CTSTATEU.EDU
Subject: what's a 40-40 & how do I get one?

I see a lot of talk about the 40-40. What is it? Who is selling it? and
how much is it? It appears to be a 30 and 40 M QRP rig, but that's all I can
figure out.
Any help would be appreciated.
Thanks... Kevin N1EPU WEBSTER_KER@CCSU.CTSTATEU.EDU

From ab4el.com Sun Jun 5 01:20:41 1994
From: stark <mswmod@sage.unr.edu>
Subject: Where oh where....

Hi all,

Can any one give me the lat & long for:

     Monroe, OR (N7CZF)
        and
     Meridian, ID (KU7Y)

I would like it in hrs, min & tenths.

Need to see if this will quilify for the 1000 mile/watt
award. I was using a tuna tin sender running 250 mw into
a pair of phased verticals on 40 m.

Thanks for any help.

73's, Ron

.....KU7Y.....
.....Monte "Ron" Stark.....
.....Sun Valley, Nevada.....

From ab4el.com Thu Jun 2 16:25:05 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: winding coils (again)

In winding an inductor using a toroid the first wind is the wire lead
initially going through the `hole' (against all intuition) so I would
assume one would start the initial wind from the `outside' and not
the inside.
But when winding wire around a cardboard form (from the bathroom)
there is no `inside' or `outside' so I've always counted as the first
turn when the wire returns to the point where the initial lead extends
downward.
Correct?

Jeff NH6IL (ex WA6QIJ) (licensed as a general for 18 years and still
                                asking novice questions)

From ab4el.com Thu Jun 2 17:20:55 1994
Subject: Re: winding coils (again)
From: "John F. Woods" <jfw@ksr.com>

> But when winding wire around a cardboard form (from the bathroom)
> there is no `inside' or `outside' so I've always counted as the first
> turn when the wire returns to the point where the initial lead extends
> downward.
> Correct?

Correct.

> In winding an inductor using a toroid the first wind is the wire lead
> initially going through the `hole' (against all intuition) so I would
> assume one would start the initial wind from the `outside' and not
> the inside.

For toroids, the Handbook suggests starting windings at the center of
the outside face, and counting the number of times you return to that
centerline. I don't have a recent Handbook handy, but it's in Chapter 2,
"Electrical Laws and Circuits", of the 1984 Handbook, under "How to Wind
Toroids" (which is at the end of the Transformers subsection, not Inductors).
(Page 2-32 if you just ACCIDENTLY happen to have that copy.)

From ab4el.com Thu Jun 2 18:46:57 1994
From: Jeffrey Herman <jherman@uhunix.uhcc.Hawaii.Edu>
Subject: Re: winding coils (again)

In regard to winding toroids vs cardboard forms:

Yes, Gary, that makes a great deal of sense. That's what I've always thought, but when I recently read that (what I thought would be) the 1st turn around the toroid should be counted as turn 2 because it has entered the field twice (or equivalently, where you start should count as a completed turn) I became comfused...

I don't use toroids, mainly because they're hard to come by here in Hawaii - our one and only ham/commercial radio supply shop, Honolulu Electronics, doesn't carry toroids. I've been on the phone calling other electronics suppliers - one place, called IC Supply, carries toroid forms but he doesn't know what their specs or model numbers are - he said he lets the buyer browse through the box to `eyeball' ones they need...

Must be the tropical heat that causes this type of thinking here in the islands...

.73,
Jeff NH6IL

From ab4el.com Fri Jun 3 11:30:34 1994
From: adams@chuck.dallas.sgi.com (Chuck Adams)
Subject: Re: winding coils (again)

Jeff, NH6IL, asks about the counting of turns for toroids. Yes, the first insertion of the wire into the toroid counts as one. I usually count the wire loops on the inside when I get through. Has worked for me on several hundred toroids that I have wound. :-)

The counting of loops on a cardboard form is counted upon the completion of each 'loop' as you describe. Haven't wound one of those since 1955 when I did my first crystal receiver. That was an unusual experience for me. My dad, W5NNB, and I built it together, as it was my first ever project. We used a 'real' galena crystal with 'cat whisker'. To this day I remember having the headphones on as my dad moved the whisker around. I swear to this day that he touched a spot where the volume was "extremely" loud. We never could find it again. A modern day miracle in physics. Sadly, my dad never again shared a project with me. He put me out on my own when several Christmas's later he bought me a Viking Challenger kit. It worked the first time and after that I was a 'Heathkit freak'. Guess that's why I still love to build a "few" kits a year.

I finished a second 40-40 kit, but haven't put it in a box. Think I'll bring it to CA next week and show the guys how to solder and

let them witness first hand that a PhD in Physics can solder. :-)
May have one of them post that fact to the net.

There is still joy in this world today taking pride in building
something, whether it be something old or something new, something
analog or something digital. It matters not that it was a kit or
you scrounged the parts, designed it or used someone else's. YOU
did the hard part. Putting it together and you got it to work.

I grew up poor. My three brothers, myself, and the rest of the
neighborhood kids had to save things that would have gone to the
landfill (dumps back then) and make toys out of them. Remember
the wooden clothes pins? How many can make a 'pea shooter'?
I still can. Neat device, but in this day and age some lawyer
would be after your butt in 10 seconds. Not politically correct.

Now I spend $50 dollars on parts and spend $500 of my valuable time
putting it together. Go figure. :-)

From the soap box of K5FO. dit dit

Chuck Adams K5FO CP-60
adams@sgi.com

From ab4el.com Fri Jun 3 14:30:17 1994
From: stark <mswmod@sage.unr.edu>
Subject: Re: winding coils (again)

Wow, if you can get someone to say that a PhD in Physics
can really solder, I'll post it here to help all the PhDs
that are trying to learn.....:-)

We used to make match shooters out of the wooden clothes
pins. Get the grass burnning and then stomp it out. Gad,
why I ever thought all thoes spankings were really that
much fun I'll never know.

If you want to run over the hill to Reno you can put the
heads back on my P/U. Blew a gasket the other day. If you
can solder and have a background in wooden clothes pin
shooters, I think I could teach you the finer points of
diesel head installation!

Have fun in CA Chuck, hope to cu on 40.

73, Ron

.....KU7Y.....
.....Monte "Ron" Stark.....
.....Sun Valley, Nevada.....

From ab4el.com Mon May 30 01:58:21 1994
From: Alan Kaul <kaul@netcom.com>
Subject: WPX

Hiya, ... ran 5-watts for 5-hours (a little Friday nite, a little Saturday morning and a little Sunday afternoon) ... and appropriately enough racked up 72 QSO's! Got some good ones on 40m -- JA, VK, YB, 20-and-15 had a lot of Carribean activity -- 6Y, NP2, KG4, KP4, VP2
and 10 yielded 3- L's (Argentina) stations!
Propagation folks say there was a solar flare. And I did not hear any of the QRP Internet gang (maybe they were saving themselves for the sprint).
73, 72 de alan

72 Q's 62 Prefixes = 8,680 points

[<Alan Kaul, W6RCL>] kaul@netcom.com

From ab4el.com Sat May 28 13:39:46 1994
From: Alan Kaul <kaul@netcom.com>
Subject: WPX Contest and QRP activity

From: [<Alan Kaul, W6RCL>] kaul@netcom.com

Message-Id: <Pine.3.89.9405281024.A15162-0100000@netcom6>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

The QSO's are slow, the propagation isn't very good and either there are VERY FEW Internet QRP ops on, or propagation to QRP stations is REALLY BAD. Last night 40M produced QSO's w/ VK, JA, YB, TI, KL7 and many Canadian prefixes. Ten sounds dead at my QTH this morning, 15 and 20 have been North America only for me -- but I have heard some Europe on 20, just

can't seem to work em. QSO total after 3-hours on-air: fewer than 50.
Come on in! CUL, 72 de alan

[<Alan Kaul, W6RCL>] kaul@netcom.com

From ab4el.com Fri Jun 10 09:33:37 1994
From: "Robert E. Easton" <bobea@watson.ibm.com>
Subject: Xmtr, Wattmeter, or Dummy Load??

The problem:
SWR into a dummy load is not the 1:1 that I expected.

The setup:
Brand new OHR Spirit feeding a brand new OHR Wattmeter feeding a dummy load.
The Wattmeter is a Breune bridge good for accurate FWD and REV readings.
  (BTW - the wattmeter is accurately calibrated to the figures specified.)
The dummy load is a 50 ohm, 10 watt ceramic resistor, one about 2 in long
with a square cross-section.

FWD power reading is about 4.5 watts, as expected. REV power reading is
about 1 watt. I expected near zero into a dummy load. Is something wrong
here, other than my expectations? :-) Maybe that resistor isn't pure
resistance? Ideas?

Thanks, Bob - N2IPY

From ab4el.com Fri Jun 10 10:06:51 1994
Subject: Re: Xmtr, Wattmeter, or Dummy Load??
From: "John F. Woods" <jfw@ksr.com>

> (BTW - the wattmeter is accurately calibrated to the figures specified.)
> The dummy load is a 50 ohm, 10 watt ceramic resistor, one about 2 in long
> with a square cross-section.

If that's a "sandbox" resistor, then it's wirewound, with the inevitable
results.

From ab4el.com Fri Jun 10 10:56:43 1994
Subject: Re: Xmtr, Wattmeter, or Dummy Load??
From: Daniel C Halbert <halbert@world.std.com>

Bob, you didn't say that the resistor was definitely non-inductive, and
given your description, it sounds like a wirewound high-wattage resistor,

which is deifnitely NOT going to give you 50 ohms pure resistive reactance at RF. Try something advertised as a dummy load. I believe Radio Shack sells low-power dummy loads.

Dan, KB1RT